Mobility in the Boston Region

The 2000 Congestion Management System Report: Existing Conditions and Next Steps

This report consists of eight subregional volumes:*

1 Inner Core
2 MAGIC
3 MetroWest
4 NSTF
5 NSPC
6 SSC
7 SWAP
8 TRIC

*Map of subregions is on page three of each volume.

Volume 1

INNER CORE

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This report is part of the ongoing public participation process of the Boston Metropolitan Planning Organization (MPO)

Comments from the public are welcome. If you feel there are congestion-related concerns we have not yet identified, your suggestions can help us improve CMS monitoring activities. Where concerns have been identified, your ideas for potential solutions and on which concerns should be given priority are also welcome.

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I. INTRODUCTION

A. Background

The purpose of the Congestion Management System (CMS) of the Boston Metropolitan Planning Organization (MPO) is to improve the mobility of residents and visitors in eastern Massachusetts. The CMS accomplishes this by providing decision makers with timely information about transportation system performance and with strategies to improve service.

The impetus for developing and operating a CMS began in 1991 with the federal Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA required state departments of transportation and metropolitan planning organizations to implement a CMS; at the state level, five other transportation management systems were also required.[1] In 1995, the National Highway System Designation Act made all of the management systems optional at the state level. However, the metropolitan planning provisions of ISTEA continued to require transportation management areas (TMAs) with a population of over 200,000 to maintain CMSs as part of their planning process.

ISTEA's successor, the Transportation Equity Act for the 21st Century (TEA-21), adopted in 1998, still requires the CMS. CMS findings must be considered in the development of a region's Transportation Plan and its Transportation Improvement Program (TIP). Moreover, for air-quality-nonattainment TMAs, any expansion of roadway capacity must be developed in the context of the CMS process. Currently, the Boston TMA is not in attainment for ozone.[2]

B. How Does the CMS Work?

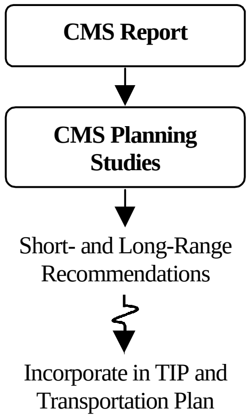
The CMS for the Boston Metropolitan Planning Organization (MPO) region is designed to locate mobility concerns and demonstrate alternative improvements that can be used by decision makers for project planning, prioritizing, and programming. The CMS is a two-part sequential process that consists of the CMS report and CMS planning studies.

The objectives of the CMS report are to locate mobility concerns and decide what planning studies, if any, should be undertaken to address them. The objectives of CMS planning studies are to test and recommend improvements that can eventually be incorporated into the Transportation Plan and TIP.

The present volume is the third CMS report since the system began in 1994. The two prior reports were published in 1996 and 1997. Although this latest report is a departure from the older reports in terms of how the content is presented and organized, they all follow the same basic steps:

(1) Identify mobility concerns
(2) Identify improvements already in progress that address any of the concerns identified
(3) Propose CMS planning studies for the concerns not already being addressed

The CMS and Its Role in the Planning Process


CMS Report
CMS Planning Studies
Short- and Long-Range Recommendations
Incorporate in TIP and Transportation Plan

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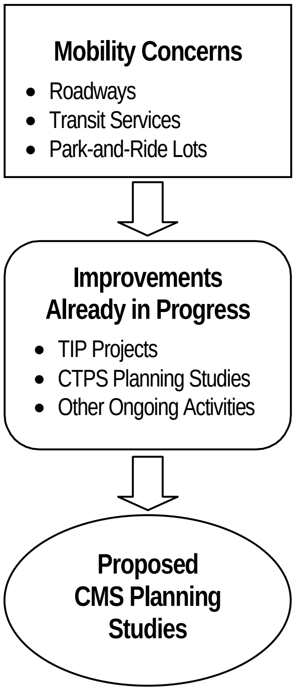
[1] The five other management systems were intermodal, public transportation, safety, pavement, and bridge management systems.

[2] A recalculation of the Boston region's air quality performance is expected in the summer of 2000, pending the adoption of new standards by the federal Environmental Protection Agency.

Mobility concerns are identified for all roadways, transit services, and park-and-ride lots that are part of the CMS network. (An explanation of which facilities are included in the network and of the rotating schedule on which specific facilities are monitored is given in the CMS Monitoring Program section of chapter II.) Bicycles and pedestrians are still not covered in the CMS report, despite numerous requests to include them, because practical methods to evaluate the performance of these modes at the report's regional level of analysis are still being tested.[3] However, bicycle and pedestrian issues are addressed in CMS planning studies, where the focus of study is narrower but more in depth.

The Process Used to Develop CMS Planning Studies



Improvements already in progress that address any of the concerns identified are inventoried by looking at TIP projects, active Central Transportation Planning Staff planning studies, and active studies and projects of state agencies such as the Massachusetts Bay Transportation Authority and Massachusetts Highway Department. The concerns that are being addressed by the identified studies and projects can show up in the first step of the CMS process, because the recommended solutions may not have been implemented yet. Identifying these studies and projects prevents duplication when, in the next step, CMS planning studies are proposed.

Proposed CMS planning studies are tailored to address those mobility concerns about which nothing else is being done. CMS studies produce recommendations that can be prioritized and incorporated into the existing planning and programming process. Examples of these studies include intersection studies, multimodal corridor studies, and transit service studies.

When CMS planning study recommendations are offered to decision makers for implementation, they are evaluated not in isolation but with whatever combination of measures may be required to meet the full range of transportation needs, including system maintenance, user safety, and capability of serving future growth. Ultimately, choices are made among strategies and projects based on social, environmental, financial, and other factors, as well as mobility enhancement considerations. Chosen projects are then included in the Transportation Plan and TIP, as the last step before implementation.

The sequence of these three steps is depicted in the flow-chart above. The report organization also follows this sequence, as explained in more detail in the following section.

C. Report Organization

The 2000 CMS report consists of eight volumes, one for each of the eight subregions in the Boston MPO region.[4] (The subregions are shown on the map on page 3.) This volume covers the Inner Core, which consists of 23 cities and towns: Arlington, Belmont, Boston, Braintree, Brookline, Cambridge, Chelsea, Everett, Holbrook, Lynn, Malden, Medford, Melrose, Nahant, Newton, Quincy, Randolph, Revere, Saugus, Somerville, Waltham, Watertown, and Winthrop.

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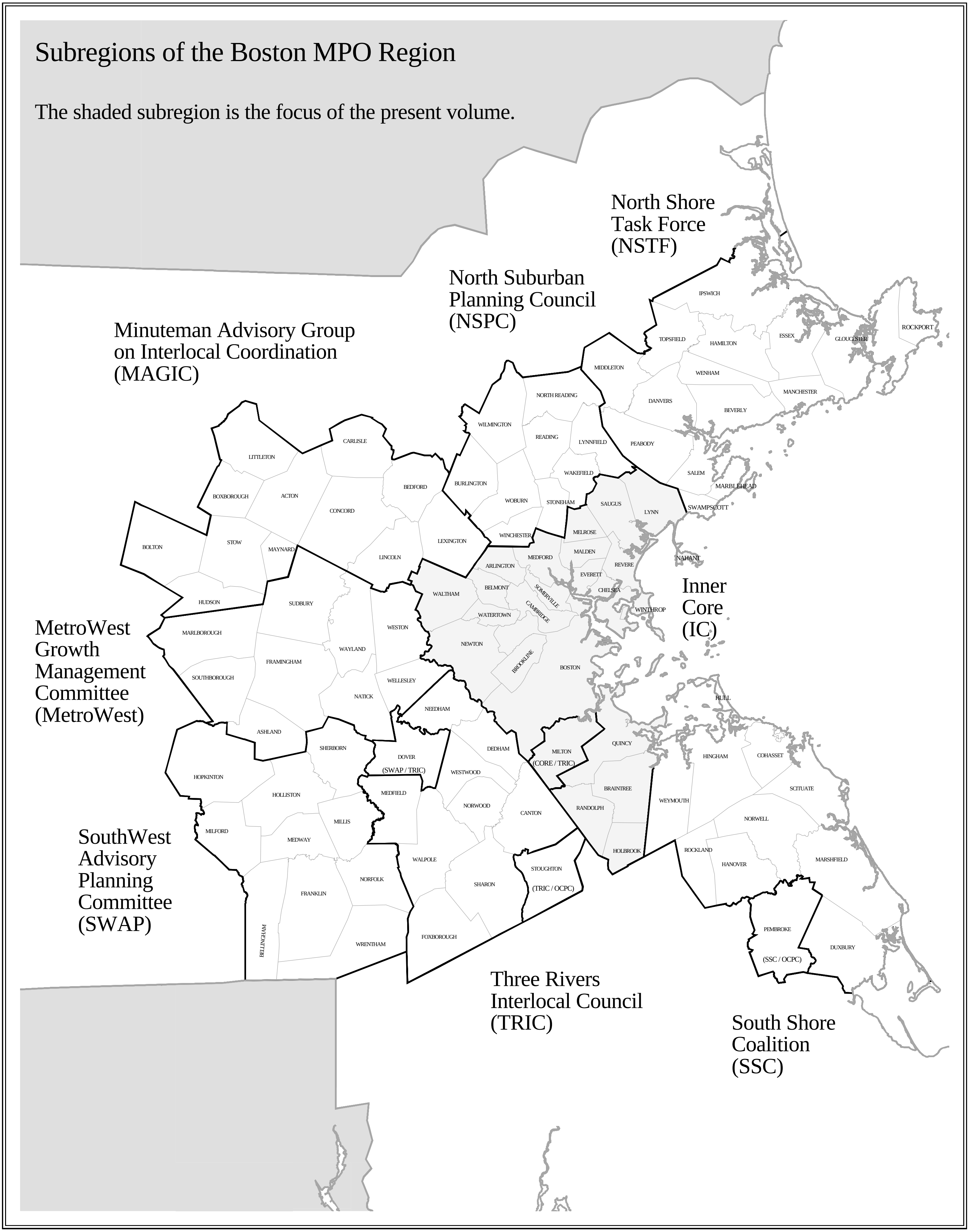
[3] A pilot study is currently underway at the Central Transportation Planning Staff that evaluates a regionally applicable performance measure for bicycles called the bicycle compatibility index. This index, adopted by the Federal Highway Administration, essentially quantifies how "bicycle friendly" a roadway is, based on geometric and traffic volume information.

[4] These eight subregions of the MPO region were developed by the Metropolitan Area Planning Council (MAPC) to facilitate subregional input into the planning process.

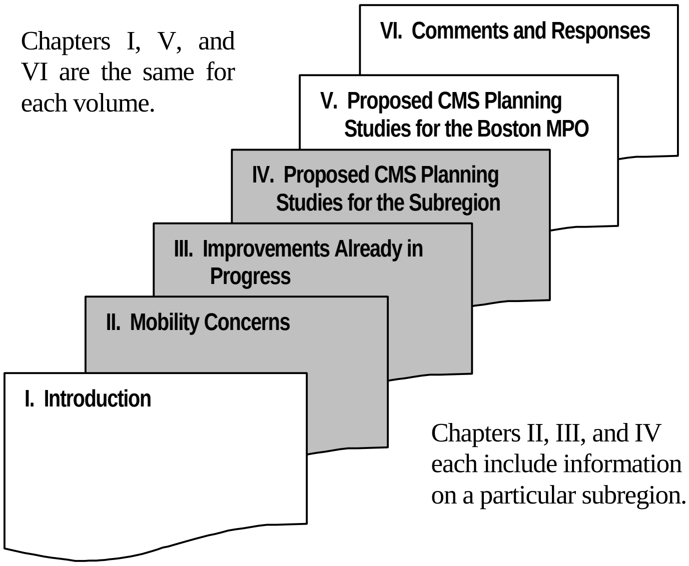


Subregions of the Boston MPO Region

The shaded subregion is the focus of the present volume.

Each volume of the CMS report is organized into six chapters, as shown in the following figure. This first chapter describes the background for the CMS, and how it works for the Boston MPO. Chapter II describes how mobility concerns are identified, and presents the results for a particular subregion (the Inner Core in the present volume) using a series of color maps and tables. Chapter III describes the process for inventorying improvements already in progress, and then presents these projects and studies for the volume's particular subregion, again using a series of color maps and tables. Chapter IV proposes CMS planning studies for the volume's particular subregion. Chapter V compiles the proposed CMS planning studies for all eight subregions, in order to provide the regionwide picture. And Chapter VI contains comments on the draft report, received during the public participation process.

2000 CMS Report Organization


VI. Comments and Responses
V. Proposed CMS Planning Studies for the Boston MPO
IV. Proposed CMS Planning Studies for the Subregion
III. Improvements Already in Progress
II. Mobility Concerns
I. Introduction

Chapters I, V, and VI are the same for each volume.

Chapters II, III, and IV each include information on a particular subregion.

D. Public Participation

Public participation takes place throughout the CMS process. MPO staff meet with transportation advisory and planning groups, including the Joint Regional Transportation Committee and the citizens' planning groups of the eight MAPC subregions, to discuss the data and recommendations generated by the CMS report. Another key element of the process is cooperation with state environmental agencies and other regulatory agencies of the state. This ensures that legal requirements and regulatory objectives are met.

Although public participation is especially important during review of the CMS report, individuals and groups are encouraged to submit comments and opinions year-round and via any of several channels: general mail, e-mail, telephone, TTY, and fax. See page ii for numbers and addresses, including the address of the MPO Web site, which includes a copy of the latest CMS report and a form that can be used for sending comments.

Many of the CMS planning studies involve participation of the public and of local officials when the prioritizing of concerns and recommendations at the local level is done. Public meetings are held to solicit opinions from citizens, and the technical advisory committees that are formed to provide expert advice and guidance include engineers and planners from local governments. Examples of current CMS planning studies that have extensive public participation components are the Lower North Shore Transportation Improvement Study, the MetroWest Subregional Area Study, and the Route 138 Corridor Planning Study.

II. MOBILITY CONCERNS

A. Overview of Concern Identification

In the Congestion Management System, mobility concerns are identified using information from three sources: *the CMS monitoring program*, *planning studies*, and *comments*. The *CMS monitoring program* identifies concerns using performance measures and thresholds of acceptable service. The program is highly systematic; it covers many facilities and filters out only the most problematic locations. CMS monitoring results are objective: they are based on raw data and established methodologies. Most of the concerns presented in this report were uncovered by CMS monitoring.

Planning studies also involve data collection and analysis, but are far less systematic than CMS monitoring. They are usually formulated after some general knowledge of concerns exists, and may target specific modes, geographic areas, or concern types. Planning studies are geared toward exploring concern causes and generating improvement alternatives. However, because they are more intensive, planning studies can identify concerns missed during CMS monitoring.

Comments come by way of the review process for CMS reports and for the Transportation Plan, and from conversations with individuals and committees at the local and regional level. Because comments stem from people's perceptions and expectations of mobility, they can be less objective than the information derived from monitoring and studies. However, they are a key source, illuminating a wide range of mobility concerns, including those related to safety, accessibility, and congestion.

The following section describes the systematic collection and analytic interpretation of CMS monitoring data.

B. CMS Monitoring Program for the Boston Region

1. Summary

The purpose of the CMS monitoring program is to identify congested locations and services throughout the existing transportation system. The existing transportation system as currently defined for the CMS includes roadways, transit services, and park-and-ride lots. The facilities and services included cover most of the travel activity that takes place in the Boston MPO region.

The roadways monitored in the CMS program consist of major arterials and freeways. The transit services consist of those owned and fully or partially operated by the MBTA, which include buses, rapid transit, light rail, commuter rail, and commuter boats. The park-and-ride lots consist of the MBTA lots and many of the MassHighway lots in the Boston MPO region.

Some monitoring of roadways is conducted every year. However, the roadways included in the program are too numerous to allow monitoring each one every year, so the monitoring is performed in a rotation, each roadway being monitored every three to five years. Out of the transit services, only MBTA buses are monitored on a yearly basis. All of the remaining services are monitored once every few years. Park-and-ride lots are officially monitored once every few years, but more frequent information is often available from the operating agency.

Performance Measures

Facility or Service	Performance Measure(s)
Roadways	• Average speed • Delay
Transit services	• Passenger crowding • On-time performance
Park-and-ride lots	• Percent utilization

Mobility concerns are identified using the most recent year's worth of data available. Therefore, concerns presented in this chapter may date back to 1995 or 1996. They are still considered concerns because there is no newer data to indicate otherwise.

Performance measures and thresholds that define congestion are used to determine the location and magnitude of concerns in the region. The performance measures used in the CMS are presented in the table above; details on thresholds are included in the following sections. These sections discuss the methods used for each of the three categories of monitoring: roadways (section 2), transit services (3), and park-and-ride lots (4).

2. Roadways

Each roadway covered by the monitoring program is monitored every three to five years. The program covers roadways that are part of the CMS network. The CMS network consists of all freeways and arterials in the National Highway System (NHS) along with some non-NHS arterials that were added because of their regional significance or in response to comments. Local streets may be monitored on a one-time basis if specific information is needed in a CMS planning activity. Roadway monitoring is conducted September through May during the weekday AM and PM peak commuter periods.

The roadway segments monitored in 1998 and 1999 (in other words, since the last CMS report) are listed in the following table. They include freeways, arterials, and local streets. Some of these roadways were selected in accord with the rotational scheduling of CMS monitoring, because they were either not measured or undersampled in previous years. Other roadways were selected because they were identified as problematic in the 1997 Transportation Plan or in comments made by citizen planning groups or individuals. Finally, some roadways were monitored to support CMS planning studies, such as the MetroWest Subregional Area Study and the Bus Route 66 Arterial Signal Retiming Study.

Roadway Segments Monitored in 1998 and 1999

Community	MAPC Subregion	Facility Name	From	To
Acton	MAGIC	Route 27	Westford Town Line	Maynard Town Line
Ashland	MetroWest	Cordaville Road	Oak Street	Pleasant Street
Ashland	MetroWest	Main Street	Pleasant Street	Prospect Street
Ashland	MetroWest	Oak Street	Southborough Town Line	Cordaville Road
Ashland	MetroWest	Pleasant Street	Cordaville Road	Main Street
Ashland	MetroWest	Prospect Street	Pleasant Street	Holliston Town Line
Bedford	MAGIC	Middlesex Turnpike	Billerica Town Line	Burlington Town Line
Bedford	MAGIC	Route 4	Billerica Town Line	Route 225
Bedford	MAGIC	Routes 4/225	Route 4	Lexington Town Line
Bellingham	SWAP	Route 140	Mendon Town Line	Franklin Town Line
Boston	Inner Core	Cambridge Street	North Harvard Street	Harvard Street
Boston	Inner Core	Dudley Street	Roxbury Street	Warren Street
Boston	Inner Core	Harvard Street	Cambridge Street	Brookline City Line
Boston	Inner Core	North Harvard Street	Cambridge City Line	Cambridge Street
Boston	Inner Core	Route 9	Brookline City Line	Exeter Street
Boston	Inner Core	Roxbury Street	Columbus Avenue	Dudley Street
Boston	Inner Core	Tremont Street	Route 9	Columbus Avenue
Braintree	Inner Core	Route 37	I-93	Holbrook Town Line
Brookline	Inner Core	Harvard Street	Boston City Line	Route 9
Brookline	Inner Core	Route 9	Newton Town Line	Boston City Line
Burlington	NSPC	Middlesex Turnpike	Bedford Town Line	Adams Street
Cambridge	Inner Core	JF Kennedy Boulevard	Massachusetts Avenue	Boston City Line
Canton	TRIC	Dedham Street	Canton Town Line	Washington Street
Canton	TRIC	Neponset Street	Norwood Town Line	Washington Street
Canton	TRIC	Route 138	Milton Town Line	Stoughton Town Line

Roadway Segments Monitored in 1998 and 1999, continued

Community	MAPC Subregion	Facility Name	From	To
Danvers	NSTF	Route 114	Middleton Town Line	Peabody Town Line
Foxborough	TRIC	Route 140	Wrentham Town Line	Mansfield Town Line
Framingham	MetroWest	Concord Street	Elm Street	Route 9
Framingham	MetroWest	Edgell Road	Sudbury Town Line	Route 9
Framingham	MetroWest	Elm Street	Sudbury Town Line	Concord Street
Framingham	MetroWest	Main Street	Route 9	Union Avenue
Framingham	MetroWest	Route 9	Southborough Town Line	Natick Town Line
Framingham	MetroWest	Union Avenue	Main Street	Route 126
Franklin	SWAP	Route 140	Bellingham Town Line	Wrentham Town Line
Holbrook	Inner Core	Route 37	Braintree Town Line	Route 139
Holliston	SWAP	Ashland Street	Ashland Town Line	Route 126
Lexington	MAGIC	Routes 4/225	Bedford Town Line	Route 2
Marblehead	NSTF	Route 114	Salem Town Line	Pleasant Street
Maynard	MAGIC	Route 27	Acton Town Line	Sudbury Town Line
Medfield	TRIC	Route 109	Millis Town Line	Route 27
Medfield	TRIC	Route 27	Sherborn Town Line	Walpole Town Line
Medford	Inner Core	Route 38	Winchester Town Line	Somerville City Line
Medway	SWAP	Route 109	Milford Town Line	Millis Town Line
Middleton	NSTF	Route 114	North Andover Town Line	Danvers Town Line
Milford	SWAP	Route 109	Route 16	Medway Town Line
Millis	SWAP	Route 109	Medway Town Line	Medfield Town Line
Millis	SWAP	Route 115	Sherborn Town Line	Norfolk Town Line
Milton	TRIC	Route 138	Route 28	Canton Town Line
Natick	MetroWest	Bacon Street	Oak Street	Wellesley Town Line
Natick	MetroWest	Oak Street	Wayland Town Line	Bacon Street
Natick	MetroWest	Route 9	Framingham City Line	Wellesley Town Line
Newton	Inner Core	Route 9	Wellesley Town Line	Brookline City Line
Norfolk	SWAP	Route 115	Millis Town Line	Route 1A
Norwood	TRIC	Neponset Street	Route 1	Canton Town Line
Peabody	NSTF	Route 114	Danvers Town Line	Salem Town Line
Salem	NSTF	Route 114	Peabody Town Line	Marblehead Town Line
Sharon	TRIC	Route 27	Walpole Town Line	Stoughton Town Line
Sharon	TRIC	South Main Street	Route 27	I-95
Sherborn	SWAP	Route 27	Natick Town Line	Medfield Town Line
Sherborn	SWAP	Route 115	Route 27	Millis Town Line
Somerville	Inner Core	Route 38	Medford Town Line	Route 28
Southborough	MetroWest	Central Street	Route 30	Route 9
Southborough	MetroWest	Framingham Road	Route 85	Route 30
Southborough	MetroWest	Oak Hill Road	Route 9	Ashland Town Line
Southborough	MetroWest	Route 9	I-495 (in Westborough)	Framingham City Line
Stoughton	TRIC	Route 138	Canton Town Line	Easton Town Line
Stoughton	TRIC	Route 27	Sharon Town Line	Brockton Town Line
Sudbury	MetroWest	Landham Road	Route 20	Framingham City Line
Sudbury	MetroWest	Nobscott Road	Route 20	Framingham City Line
Sudbury	MetroWest	Route 27	Maynard Town Line	Wayland Town Line
Walpole	TRIC	Route 27	Medfield Town Line	Sharon Town Line
Wayland	MetroWest	Oak Street	Route 30	Natick Town Line
Wayland	MetroWest	Route 27	Sudbury Town Line	Natick Town Line
Wellesley	MetroWest	Bacon Street	Natick Town Line	Route 135
Wellesley	MetroWest	Cliff Road	Weston Town Line	Route 9
Wellesley	MetroWest	Route 9	Natick Town Line	Newton Town Line
Wellesley	MetroWest	Weston Road	Weston Town Line	Route 135
Weston	MetroWest	Cliff Road	Oak Street	Weston Town Line
Weston	MetroWest	Highland Street	Route 20	Route 30
Weston	MetroWest	Newton Street	Route 20	Route 30

Roadway Segments Monitored in 1998 and 1999, continued

Community	MAPC Subregion	Facility Name	From	To
Weston	MetroWest	Oak Street	Route 30	Cliff Road
Weston	MetroWest	Wellesley Street	Route 30	Wellesley Town Line
Westwood	TRIC	Canton Street	Route 128	Canton Town Line
Weymouth	SSC	Route 18	Route 53	Abington Town Line
Wilmington	NSPC	Route 38	Route 129	Woburn Town Line
Winchester	NSPC	Route 38	Woburn Town Line	Medford Town Line
Woburn	NSPC	Route 38	Wilmington Town Line	Winchester Town Line
Wrentham	SWAP	Route 140	Franklin Town Line	Foxborough Town Line

Performance Measures

Two performance measures are used to measure congestion on each roadway segment monitored: average travel speed (in mph) and delay (in minutes).[5] The performance measures are calculated from travel time data. Travel time data are collected using a test vehicle that travels with the flow of traffic (the "floating car" technique). The test vehicle is equipped with a global positioning system (GPS) that records travel times and distances at one-second intervals between checkpoints on the system.

Average Travel Speed

The threshold used to define congestion for arterial segments is based on average travel speed and the level-of-service (LOS) concept presented in the 1994 Highway Capacity Manual (HCM). LOS is a qualitative congestion measure based on quantitative data (average travel speed). Six levels of service are defined. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst. LOS E represents capacity conditions. Congestion is defined as LOS E-F. For arterials, the CMS threshold for LOS E–F is 15 mph.[6]

For freeway segments in the HCM, LOS is not directly based on average travel speed as it is with arterials, but on other traffic flow measures. Therefore, a threshold unique to the CMS has been defined that closely reflects congestion found on freeway segments in the Boston MPO region. This threshold is 40 mph.

Roadway Congestion Thresholds

	Average travel speed	Average delay
Arterials	≤ 15 mph	≥ 1 minute
Freeways	≤ 40 mph	≥ 1 minute

Delay

Delay is defined as the condition of a vehicle traveling below 5 mph on a freeway or arterial segment (including stopped time), as long as the speed has been lower than 5 mph for at least 3 consecutive seconds. This delay is different from "stopped delay" because not only stops, but times during which a vehicle is moving very slowly, are included in the delay calculations.

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[5] Delay was added as a performance measure in 1997 because there was some concern that congestion concerns could be missed on longer segments using only average speed. For example, a long segment with free-flow speeds of 40–50 mph over most of its length could have an isolated, congested signal location that is not reflected in the overall average speed for the segment. The delay performance measure would indicate a congestion concern along this segment.

[6] Average travel speeds below 13 mph (for suburban arterials), 10 mph (for intermediate arterials), and 7 mph (for urban arterials) correspond to LOS E–F, according to Table 11-4 in the 1994 Highway Capacity Manual. A threshold of 15 mph for all arterials regardless of their classification was selected for the CMS both for simplicity and to be conservative when identifying congestion concerns.

Speeds and delays are calculated for every roadway segment monitored. Short segments could show low speeds, but minimal delays. Longer segments may have high average speeds, but significant delays. The most congested segments will have both low speeds and high delays. The CMS roadway congestion threshold in terms of delay, for both arterials and freeways, is ≥ 1 minute.[7]

Pilot Study of Alternative Method of Monitoring Arterial System Performance

A different approach to identifying concerns on arterial roadways is being tested in the SouthWest Advisory Planning Committee (SWAP) subregion. This pilot study introduces new data elements that expand our knowledge about transportation system performance and help to define the CMS planning studies that should be undertaken to improve performance.

The CMS's current monitoring program, as explained above, measures the performance of arterial segments using average speed and delay. The SWAP pilot study attempts to identify more precisely the location and cause of congestion concerns by shifting the focus from arterial segments to intersections, which is where most congestion concerns originate. The new performance measure used to monitor intersections is traffic queue length. Excessive traffic queue length is a good indicator of concerns at intersections and of consequent concerns on adjacent arterial segments. Data on traffic queue lengths are collected during the AM and PM peak hours, which is when traffic conditions are at their worst.

The pilot study adds a safety component by plotting the locations of vehicle, bicycle, and pedestrian collisions. The addressing of bicycle and pedestrian issues is also pursued through inventorying existing facilities, such as bicycle lanes along roadways and crosswalks at intersections. This information will help prioritize bicycle and pedestrian planning needs.

The pilot study will be evaluated based on (1) its ability to provide a more complete picture of congestion and mobility concerns, (2) its ability to help prioritize concern areas to be addressed by CMS planning studies, and (3) its cost-effectiveness. If the program is a success, it may be extended to other subregions of the Boston MPO region.

3. Transit Services

All of the bus routes in the MBTA system were monitored between fall 1998 and spring 1999. Monitoring of other MBTA services is taking place now, and the results will not be available until the next Annual Service Plan is published.[8] Therefore, concerns identified in this report for the services other than bus are based on data from the 1997 CMS report.

Performance Measures

The CMS uses two performance measures to evaluate the quality of transit services: passenger crowding and on-time performance (schedule adherence). The data for these measures comes from ridechecks on buses and from station counts for rapid transit, light rail, and commuter rail.

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[7] In the 1994 HCM, congested (LOS E–F) conditions for a signalized intersection are defined as 40 seconds or more of "stopped delay." But because CMS delay includes times during which a vehicle moves very slowly (below 5 mph), the 1-minute threshold was selected as comparable to the HCM LOS E–F definition. Since no delay thresholds have been defined for freeways (only speed and density are used in the HCM), 1-minute is also used for freeway segments.

[8] The MBTA's fiscal year 1998 Annual Service Plan is the latest plan. The next expected Annual Service Plan is for fiscal year 2000.

Passenger Crowding
The MBTA has established passenger crowding performance thresholds for all of its transit services. The CMS has adopted the MBTA thresholds for rapid transit, light rail, commuter rail, and commuter boat, but has revised the passenger crowding threshold for buses to better zero in on concern routes.[9]

On-Time Performance
The MBTA has established schedule-adherence (on-time) performance thresholds for all of its services. The evaluation of a service is based on excessively early or late arrivals during all periods (AM peak and PM peak). As with passenger crowding, the CMS follows the MBTA's measures of on-time performance for rapid transit, light rail, commuter rail, and commuter boat, but calculates on-time performance for buses differently. For buses, the CMS measures on-time performance in terms of late arrivals only.[10] Late arrivals are defined as any trip arriving at its terminus 5 or more minutes after its scheduled arrival time. Since roadway congestion is generally the primary cause for late arrivals by buses, this measure ties roadway and transit performance together and should lead to corridor studies that benefit both automobile and transit users.

Transit PerformanceThresholds

Service	Peak Period Crowding (Passengers per Seat)	On-Time Performance (Percent of Trips Operating within 5 Minutes of Scheduled Trip Time)
Rapid Transit: Blue Line	2.25	95%
Rapid Transit: Orange Line	2.25	95%
Rapid Transit: Red Line	2.70	95%
Light Rail: Green Line	2.20	Subway: 95%. Surface: 85%
Bus	1.40 (AM and PM peak 30 minutes)	60% (late arrivals only)
Commuter Rail: North	1.00	95%
Commuter Rail: South	1.00	95%
Commuter Boat: Hingham	1.00	95%
Commuter Boat: Charlestown, East Boston	1.25	95%

4. Park-and-Ride Lots

All MBTA park-and-ride lots and 28 MassHighway park-and-ride lots are included in the CMS monitoring program. The MBTA lots serve commuter rail, rapid transit, and commuter boat, and are located both inside and outside the Boston MPO region. The MassHighway lots serve MBTA buses, private-carrier buses, and rideshare operations such as carpools and vanpools.

The MBTA lot at the Wonderland Blue Line station in Revere was monitored (counted) in 1998 as part of the Lower North Shore Transportation Improvement Study. The status of 70 out of the remaining 144 MBTA lots was updated in 1998 by the MBTA planning department based on first-hand knowledge of conditions at their lots. Fourteen MassHighway lots were counted in 1998 as part of an ongoing CMS effort to increase the use of rideshare park-and-ride lots throughout Massachusetts. These lots are listed in the adjacent table.

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[9] The MBTA's passenger crowding performance measure is based on the average number of passengers per seat for the *entire* peak period. In the case of buses, it was found that under this method of averaging over the entire period, much of the crowding that goes on for individual trips was not detected. In fact, none of the bus routes exceeded the crowding standard. This smoothing was recognized as a concern in the fiscal year 1998_Annual Service Plan. After discussion with the MBTA's Service Planning Group, it was agreed that average passengers per seat for the peak *half hour* would be the CMS performance measure. Just the peak half hour is used on the assumption that the most crowded routes are most likely to remain crowded for all trips in that half hour.

[10] Using a combination of early and late arrivals and departures resulted in all bus routes being classified as deficient when compared to the standard. As with the passenger crowding measure, the on-time performance measure is currently under review by the MBTA.

Performance Measure: Percent of Lot Utilization

One performance measure is used to identify concerns at park-and-ride lots: percent of lot utilization. The results for each lot are classified into one of three categories:

- Full - 85% or more of all spaces are typically filled.
- Partially full - 50%–85% of the spaces are consistently filled. The lot is well used, but spaces are available if demand increases.
- Underutilized - Less than 50% of all spaces are typically filled.

A concern is defined as any lot that is full or underutilized according to these definitions.

MassHighway Park-and-Ride Lots Monitored in 1998

Park-and-Ride Lot	Services	MAPC Subregion
Andover	Car/Van	
Bridgewater	Car/Van/Private-Carrier Bus	*
Canton	Car/Van/MBTA Bus	TRIC
Framingham	Car/Van/Private-Carrier Bus	MetroWest
Georgetown	Car/Van/Private-Carrier Bus	*
Milton	Car/Van/MBTA Bus	TRIC
Needham	Car/Van	TRIC
Newburyport	Car/Van/Private-Carrier Bus	*
Pembroke	Car/Van	SSC
Plymouth/Cherry Street	Car/Van/Private-Carrier Bus	*
Plymouth/Long Pond Road	Car/Van	*
Rockland	Car/Van/Private-Carrier Bus	SSC
West Bridgewater/ Route 106	Car/Van/Private-Carrier Bus	*
West Bridgewater/ Elm Street	Car/Van/Private-Carrier Bus	*

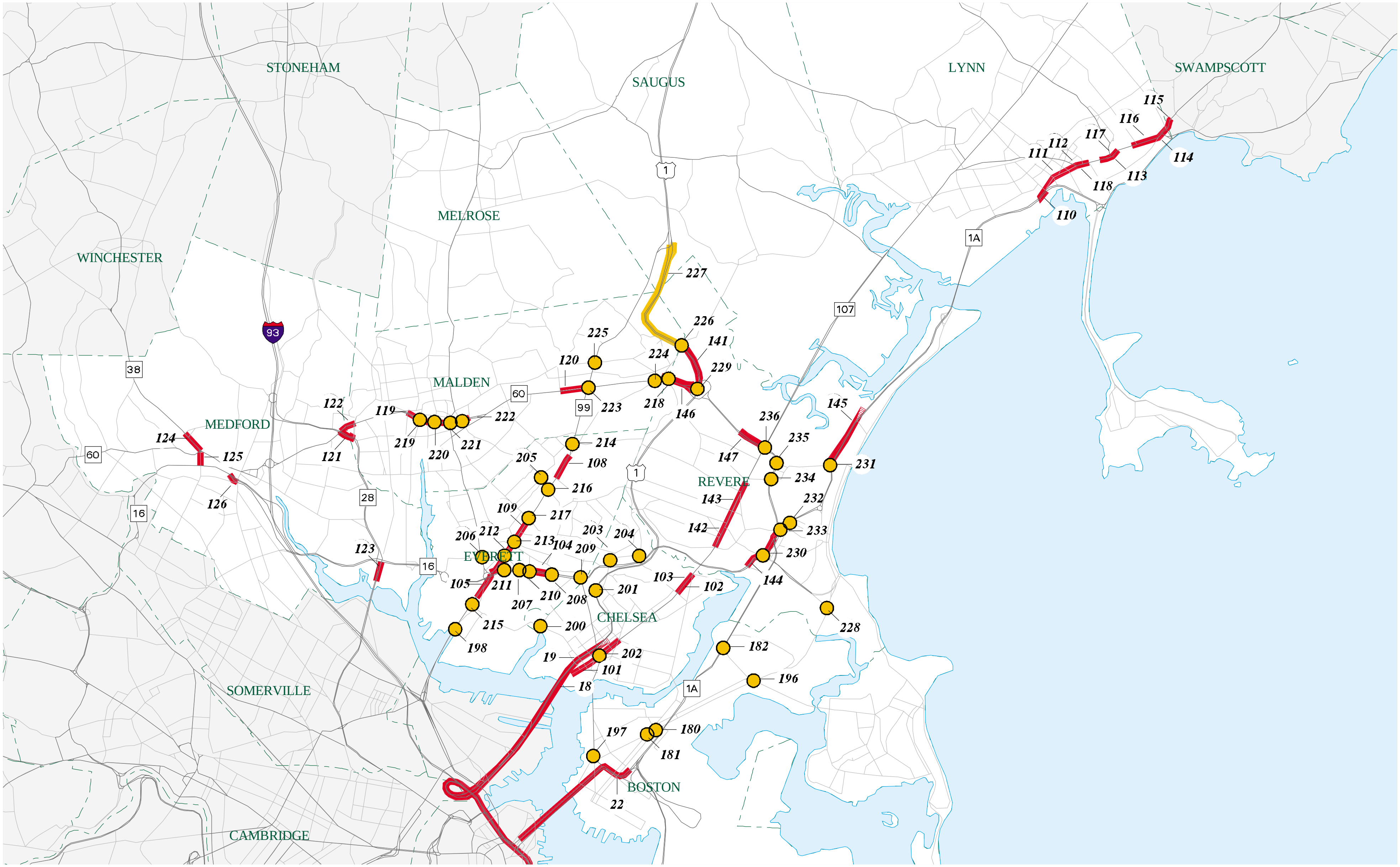
* Outside Boston MPO region

C. Mobility Concerns in the Inner Core Subregion

The mobility concerns for the Inner Core subregion are summarized in the maps and indexes on the following pages. For each of the three categories of transportation facility covered by the CMS, there is a set of maps accompanied by an index. For the convenience of the reader, the subregion has been divided into three subareas—upper, middle, and lower—and each set of maps includes at least one for each subarea (more than one when necessary to show the information clearly). The sets of maps are:

- Roadway Mobility Concerns by Source of Identification
  - Inner Core: Upper
  - Inner Core: Middle
  - Inner Core: Lower
- Transit Mobility Concerns by Mode
  - Inner Core: Upper (two maps)
  - Inner Core: Middle (two maps)
  - Inner Core: Lower
- Park-and-Ride Lot Concerns by Type
  - Inner Core: Upper
  - Inner Core: Middle
  - Inner Core: Lower

The maps show the location of and provide basic information about each concern, and reference their accompanying index, which provides more detailed information.



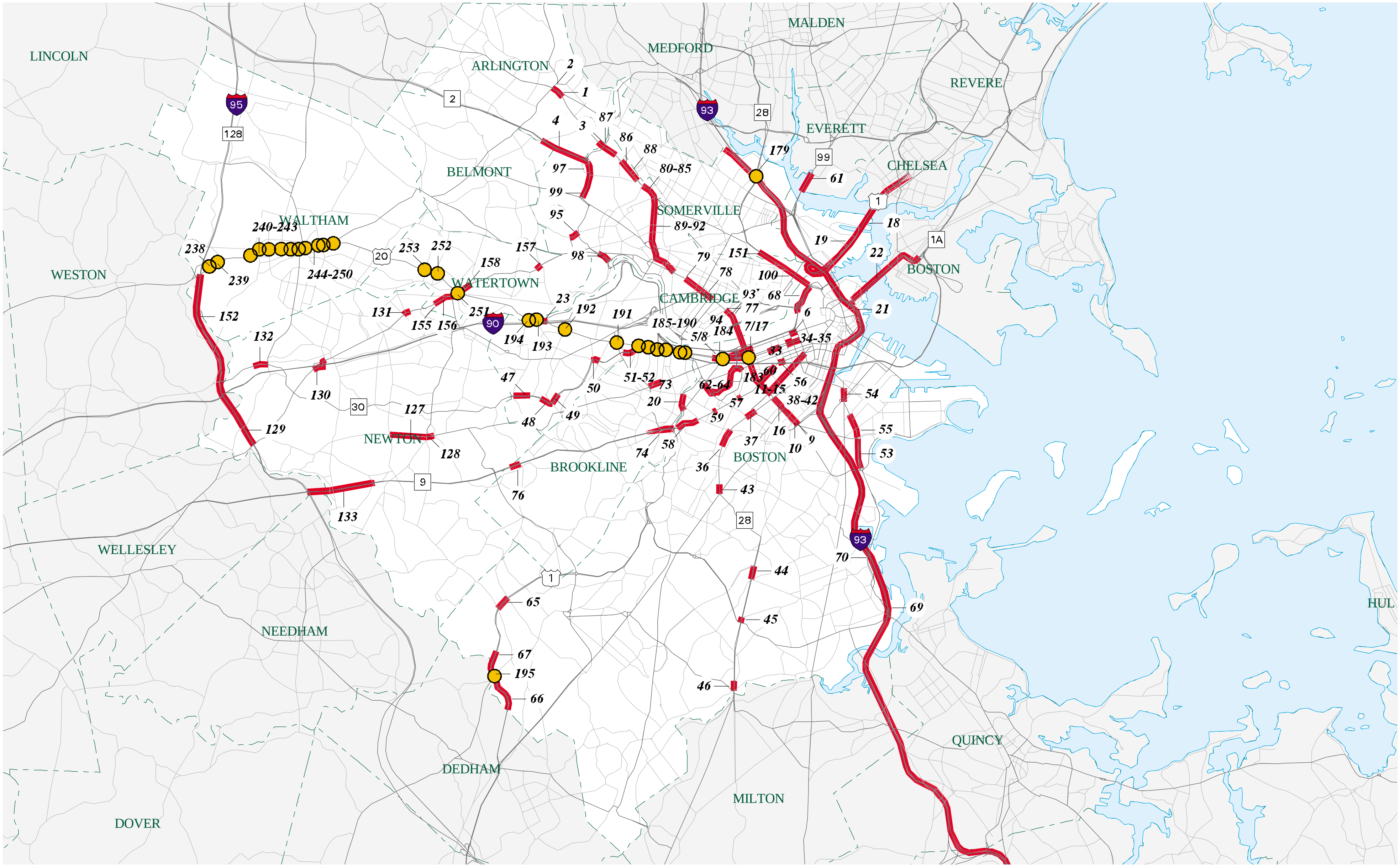
Roadway Mobility Concerns by Source of Identification

Inner Core: Upper

Sources of Identification:

- CMS monitoring
- Planning study
- Comment

CTPS Boston-Region Congestion Management System



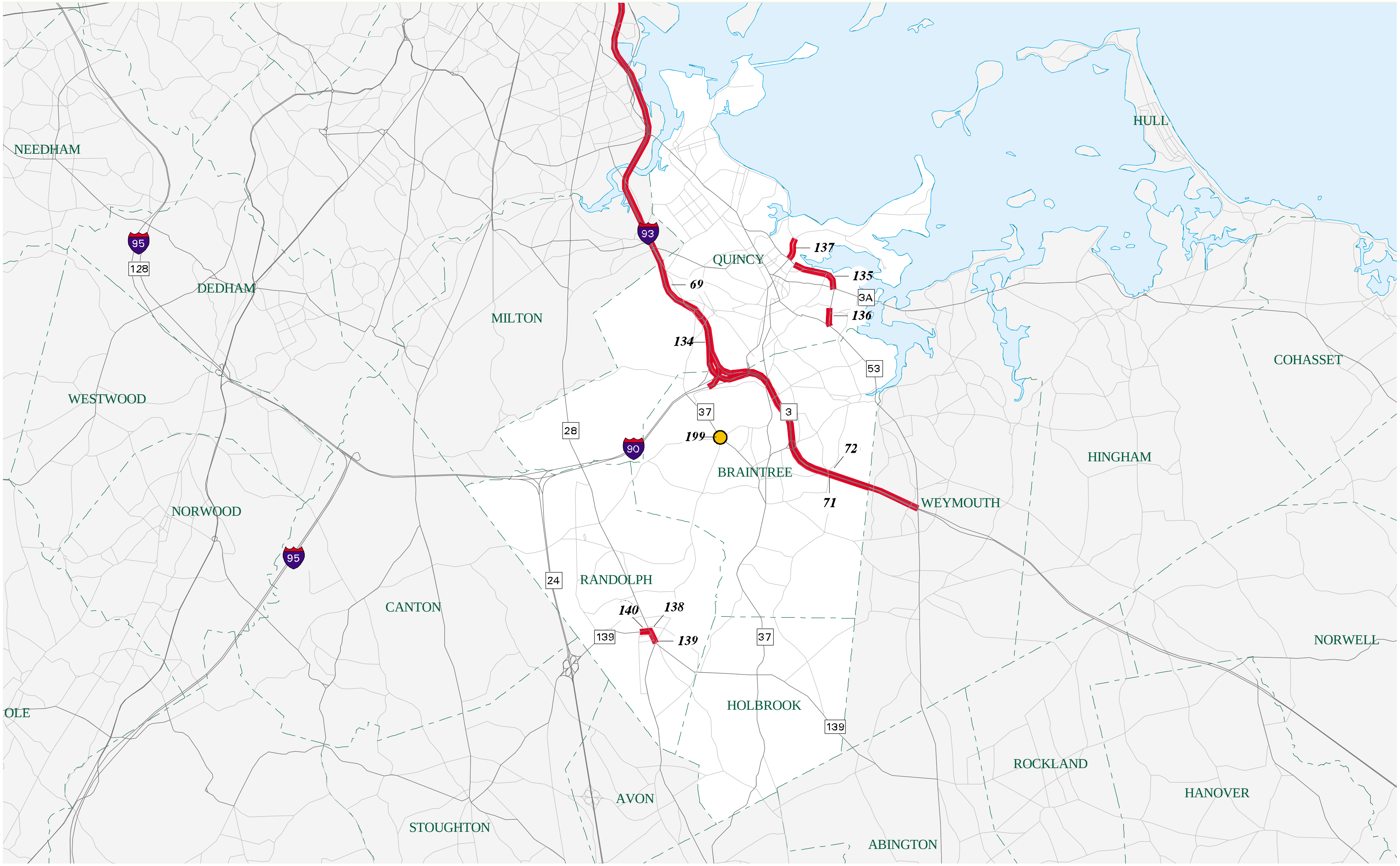
Roadway Mobility Concerns by Source of Identification

Inner Core: Middle

Sources of Identification:

🟥 CMS monitoring
🟨 Planning study
🟪 Comment

CTPS Boston-Region Congestion Management System



Roadway Mobility Concerns by Source of Identification

Inner Core: Lower

Sources of Identification:

- CMS monitoring
- Planning study
- Comment

CTPS Boston-Region Congestion Management System

Index of Roadway Mobility Concerns by Source of Identification
Inner Core

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
A. CMS Monitoring				
1	Arlington	Mass Ave.	NB	Franklin St. to Medford St.
2	Arlington	Mass Ave.	NB,SB	Medford St. to Mystic St.
3	Arlington	Mass Ave.	SB	Thorndike St. to Rte. 16
4	Arlington	Rte. 2	EB	2nd Lake St. on-ramp to Rte. 16
5	Boston	Beacon St.	EB	Kenmore St. to Charlesgate East
6	Boston	Beacon St.	EB	Berkeley St. to Arlington St.
7	Boston	Beacon St.	WB	Hereford St. to Charlesgate East
8	Boston	Beacon St.	WB	Charlesgate West to Brookline Ave.
9	Boston	Mass Ave.	NB,SB	Melina Cass Blvd. to Albany St
10	Boston	Mass Ave.	NB	Shawmut Ave. to Tremont St
11	Boston	Mass Ave.	NB,SB	Columbus Ave. to St. Botolph St.
12	Boston	Mass Ave.	NB,SB	Huntington Ave. to Westland Ave.
13	Boston	Mass Ave.	NB	Belvidere St. to Commonwealth Ave.
14	Boston	Mass Ave.	SB	Belvidere St. to Columbus Ave.
15	Boston	Mass Ave.	SB	Huntington Ave. to St. Botolph St.
16	Boston	Mass Ave.	SB	Shawmut St. to Albany St.
17	Boston	Mass Ave.	NB,SB	Commonwealth Ave. to Marlboro St.
18	Boston	Rte. 1	NB	I-93 to Chelsea St. on-ramp
19	Boston	Rte. 1	SB	Everett Ave. on-ramp to I-93
20	Boston	Rte. 1	NB, SB	Brookline Ave. to Longwood Ave.
21	Boston	Rte. 1A	NB	North St. to Callahan Tunnel entry portal
22	Boston	Rte. 1A	SB	Logan Airport to Sumner Tunnel exit portal
23	Boston	Rte. 20	WB	Birmingham Pkwy. to Soldiers Field Rd.
31	Boston	Rte. 20/30	EB	Blanford St. to Kenmore Square
32	Boston	Rte. 20/30	WB	Hereford St. to Kenmore Square
33	Boston	Rte. 20/30	EB	Fairfield St. to Dartmouth Ave.
34	Boston	Rte. 20/30	EB,WB	Clarendon St. to Berkeley St.
35	Boston	Rte. 20/30	EB	Berkeley St. to Arlington St.

Index of Roadway Mobility Concerns by Source of Identification, continued

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
36	Boston	Rte. 28	NB	Cedar St. to New Dudley St.
37	Boston	Rte. 28	NB,SB	Ruggles Ave. to Columbus Ave.
38	Boston	Rte. 28	NB	West Canton St. to Dartmouth St.
39	Boston	Rte. 28	NB,SB	Dartmouth St. to Clarenden St.
40	Boston	Rte. 28	NB	Berkeley St. to Arlington St.
41	Boston	Rte. 28	SB	Berkeley St. to Clarenden St.
42	Boston	Rte. 28	SB	West Canton St. to Mass Ave.
43	Boston	Rte. 28	SB	Bragdon St. to Washington St.
44	Boston	Rte. 28	SB	American Legion Hwy. to Talbot Ave.
45	Boston	Rte. 28	SB	Baird St. to Rte. 203
46	Boston	Rte. 28	SB	Babson St. to River St.
47	Boston	Rte. 30	WB	Greycliff Rd. to Lake St.
48	Boston	Rte. 30	EB	South St. to Chestnut Hill Ave.
49	Boston	Rte. 30	WB	Cheswick Rd. to Chestnut Hill Ave.
50	Boston	Rte. 30	WB	Allston St. to Warren Ave.
51	Boston	Rte. 30	WB	Fordham Rd. to Harvard Ave.
52	Boston	Rte. 30	EB	Fordham Rd. to Rte. 20/30
53	Boston	Rte. 3A	NB, SB	Kosciuzko Circle to Dorchester St.
54	Boston	Rte. 3A	NB, SB	Dorchester Ave. to West 4th St.
55	Boston	Rte. 3A	SB	D St. to Dorchester St.
56	Boston	Rte. 9	WB	Dartmouth St. to Exeter St.
57	Boston	Rte. 9	WB	Opera Place to Forsythe Way
58	Boston	Rte. 9	WB	Fernwood Rd. to South Huntington Ave.
59	Boston	Rte. 9	EB	Longwood Ave. to Evans Way
60	Boston	Rte. 9	EB	Mass Ave. overpass to Ring Rd.
61	Boston	Rte. 99	NB	Boston Edison to Dexter St.
62	Boston	Rte. 1 (Riverway)	NB	Brookline Ave. to Jersey St.
63	Boston	Rte. 1 (Riverway)	NB	Ipswich St. to Bolyston St.
64	Boston	Rte. 1 (Riverway)	SB	Ipswich St. to Park Dr.
65	Boston	Rte. 1 (VFW)	SB	LaGrange St. to Baker St.
66	Boston	Rte. 1 (VFW)	NB	Dedham TL to Rte. 109

Index of Roadway Mobility Concerns by Source of Identification, continued

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
67	Boston	Rte. 1 (VFW)	SB	Gardner St. to Rte. 109
68	Boston	Storrow Dr.	EB	Charles St. off-ramp to Leverett Circle
69	Boston, Milton, Quincy, Braintree	I-93	NB	Rte. 3 split (Exit 7) to Tobin Bridge (Exit 21)
70	Boston, Somerville	I-93	SB	Sullivan Square off-ramp (Exit 29) to Carpool Lane Begin
71	Braintree	Rte. 3	SB	I-93 split to Union St. (Exit 17)
72	Braintree, Weymouth	Rte. 3	NB	Rte. 18 (Exit 16) to Quincy Adams Station (Exit 20)
73	Brookline	Beacon St.	EB,WB	Harvard St. to St. Paul St.
74	Brookline	Rte. 9	WB	Rte. 1 overpass to Brookline Ave.
75	Brookline	Rte. 9	EB,WB	Brookline Ave. to Washington St.
76	Brookline	Rte. 9	EB	Tully St. to Hammond St.
77	Cambridge	Mass Ave.	NB,SB	Amherst St. to Vassar St.
78	Cambridge	Mass Ave.	NB	Main St. to Douglas Place
79	Cambridge	Mass Ave.	NB,SB	Douglas Place to Hancock St.
80	Cambridge	Mass Ave.	NB	Dunster St. to South Harvard Square
81	Cambridge	Mass Ave.	NB,SB	S Harvard Square to N Harvard Square
82	Cambridge	Mass Ave.	NB	Waterhouse St. to Wendell St.
83	Cambridge	Mass Ave.	NB	Roseland St. to Upland Rd.
84	Cambridge	Mass Ave.	NB,SB	Upland Rd. to Sommerville Ave.
85	Cambridge	Mass Ave.	NB	Creighton St. to Walden St.
86	Cambridge	Mass Ave.	NB	Rice St. to Harvey St.
87	Cambridge	Mass Ave.	NB	Churchill Ave. to Rte. 16
88	Cambridge	Mass Ave.	SB	Rice St. to Rindge Ave.
89	Cambridge	Mass Ave.	SB	Creighton St. to Somerville Ave.
90	Cambridge	Mass Ave.	SB	Roseland St. to Wendell St.
91	Cambridge	Mass Ave.	SB	Waterhouse St. to North Harvard Square
92	Cambridge	Mass Ave.	SB	South Harvard Square to Mt. Auburn St.
93	Cambridge	Mass Ave.	SB	Albany St. to Vassar St.
94	Cambridge	Mass Ave.	SB	Amherst St. to Beacon St.

Index of Roadway Mobility Concerns by Source of Identification, continued

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
95	Cambridge	Rte. 16	EB	Huron Ave. to Fresh Pond Pkwy.
97	Cambridge	Rte. 2	EB,WB	Rte. 16 to Rindge Ave
98	Cambridge	Rte. 2	EB	Mt. Auburn St. to Memorial Dr.
99	Cambridge	Rte. 2/3	WB	Concord Ave. to Rindge Ave.
100	Cambridge	Rte. 28	NB,SB	Leverett Circle to East St.
101	Chelsea	Rte. 107	NB	Chelsea Yacht Club to Bellingham St.
102	Chelsea	Rte. 107	NB,SB	Webster Ave. to Stockton St.
103	Chelsea	Rte. 107	SB	Clinton St. to Webster Ave.
104	Everett	Rte. 16	EB	Lewis St. to Second St.
105	Everett	Rte. 16	WB	Vine St. to Second St.
106	Everett	Rte. 99	NB	Bowdoin St. to Second St.
107	Everett	Rte. 99	NB,SB	Second St. to School St.
108	Everett	Rte. 99	SB	Edith St. to Lynn St.
109	Everett	Rte. 99	SB	Hancock St. to School St.
110	Lynn	Rte. 1A	NB	Kingman St. to Broad St.
111	Lynn	Rte. 1A	NB,SB	Washington St. to Central Ave.
112	Lynn	Rte. 1A	NB SB	Central Ave. to Silsbee St.
113	Lynn	Rte. 1A	NB,SB	Atlantic St. to Cherry St.
114	Lynn	Rte. 1A	NB,SB	Ocean Terrace to Eastern Ave.
115	Lynn	Rte. 1A	SB	Burril Ave. to Eastern Ave.
116	Lynn	Rte. 1A	SB	Ocean Terrace to Autumn St.
117	Lynn	Rte. 1A	SB	Atlantic St. to Green St.
118	Lynn	Rte. 1A	SB	Nahant St. to Silsbee St.
119	Malden	Rte. 60	EB	Pearl St. to Commercial St.
120	Malden	Rte. 60	WB	Rte. 99 to Maplewood St.
121	Malden, Medford	Rte. 28	NB	Fellsway to Rte. 60
122	Malden, Medford	Rte. 60	WB	Fellesway to Rte. 28
123	Medford	Rte. 28	NB	Presidents to Rte. 16
124	Medford	Rte. 38	NB	Rte. 60 to Lawrence Rd.
125	Medford	Rte. 38	NB,SB	Mystic Valley Pkwy. to Rte. 60
126	Medford	Rte. 38	SB	I-93 off-ramp begin to I-93 off-ramp end

Index of Roadway Mobility Concerns by Source of Identification, continued

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
127	Newton	Beacon St.	EB	Walnut St. to Centre St.
128	Newton	Beacon St.	EB,WB	Centre St. to Langley Rd.
129	Newton	Rte. 128	NB	Rte. 16 (Exit 21) to I-90 (Exit 23-4-5)
130	Newton	Rte. 16	EB	Perkins St. to Highland St.
131	Newton	Rte. 16	EB,WB	Adams St. to Chapel St.
132	Newton	Rte. 30	EB	Ash St. to Lexington St.
133	Newton	Rte. 9	EB	Rte. 128 overpass to Elliot St.
134	Quincy, Boston	I-93	SB	Rte. 3A/Neponset St. (Exit 12) to Rte. 3 split (Exit 7)
135	Quincy	Rte. 3A	SB	McGrath Hwy. to Washington St.
136	Quincy	Rte. 53	NB	Quincy Ave. to South St.
137	Quincy	Sea St.	WB	Quincy Shore Dr. to Rte. 3A
138	Randolph	Rte. 139	EB	Rte. 28 North to Memorial Pkwy.
139	Randolph	Rte. 139	WB	Rte. 28 South to Memorial Pkwy.
140	Randolph	Rte. 139	WB	Rte. 28 North to Highland Ave.
141	Revere	Rte. 1	NB, SB	Rte. 60 on-ramp to Lynn St. off-ramp
142	Revere	Rte. 107	NB	Fenno St. to Ambrose St.
143	Revere	Rte. 107	SB	Revere St. to Central Ave.
144	Revere	Rte. 16	EB	Vinal St. to Rte. 1A/60
145	Revere	Rte. 1A	NB,SB	Bell Circle to Beach St.
146	Revere	Rte. 1A	SB	Oak Island Rd. to Revere St.
147	Revere	Rte. 60	EB	Hancock Rd. to Copeland Circle
148	Revere	Rte. 60	WB	Brown Circle to Charger St.
151	Somerville, Cambridge	Rte. 28	SB	Twin City to East St.
152	Waltham	Rte. 128	NB	I-90 on-ramp to Rte. 20 (Exit 26)
155	Watertown	Rte. 16	EB	Capital St. to California St.
156	Watertown	Rte. 16	EB,WB	California St. to Main St.
157	Watertown	Rte. 16	EB	Kimball Rd. to Arlington St.
158	Watertown	Rte. 16	WB	Irving St. to Rte. 20

Index of Roadway Mobility Concerns by Source of Identification, continued

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
B. Planning Studies				
180	Boston	Bennington St.	I	Bennington St. at Bremen St.
181	Boston	Chelsea St	I	Chelsea St. at Prescott St. (Day Square)
182	Boston	Rte. 1A	I	Rte. 1A at Boardman St.
183	Boston	Rte. 20	I	Rte. 20 at Charlesgate East
184	Boston	Rte. 20	I	Rte. 20 at Brookline Ave./Beacon St.
185	Boston	Rte. 20	I	Rte. 20 at University Rd.
186	Boston	Rte. 20	I	Rte. 20 at BU Bridge/Essex St.
187	Boston	Rte. 20	I	Rte. 20 at St. Paul St.
188	Boston	Rte. 20	I	Rte. 20 at Pleasant St.
189	Boston	Rte. 20	I	Rte. 20 at Babcock St.
190	Boston	Rte. 20	I	Rte. 20 at Commonwealth Ave.
191	Boston	Rte. 20	I	Rte. 20 at Harvard St.
192	Boston	Rte. 20	I	Rte. 20 at Market St.
193	Boston	Rte. 20	I	Rte. 20 at Birmingham Pkwy./Parsons St.
194	Boston	Rte. 20	I	Rte. 20 at Soldiers Field Rd./Nonantum Rd.
195	Boston	Rte. 1 (VFW)	I	Rte. 1 at Rte. 109
196	Boston	Saratoga St.	I	Saratoga St. at Bennington St.
197	Boston	Saratoga St.	I	Saratoga St. at Meridian St. (Central Square)
198	Boston, Everett	Rte. 99	I	Rte. 99 at Dexter St.
199	Braintree	Rte. 37	I	Rte. 37 at West St./Granite St. (Five Corners)
200	Chelsea	Beacham St.	I	Beacham St. at Market St.
201	Chelsea	Rte. 1	I	Rte. 1 SB off/on-ramps at Carter St.
202	Chelsea	Rte. 107	I	Rte. 107 at Cross St./Everett Ave.
203	Chelsea	Rte. 16	I	Rte. 16 at Washington St.
204	Chelsea	Rte. 16	I	Rte. 16 at Garfield Ave./Webster Ave.

Index of Roadway Mobility Concerns by Source of Identification, continued

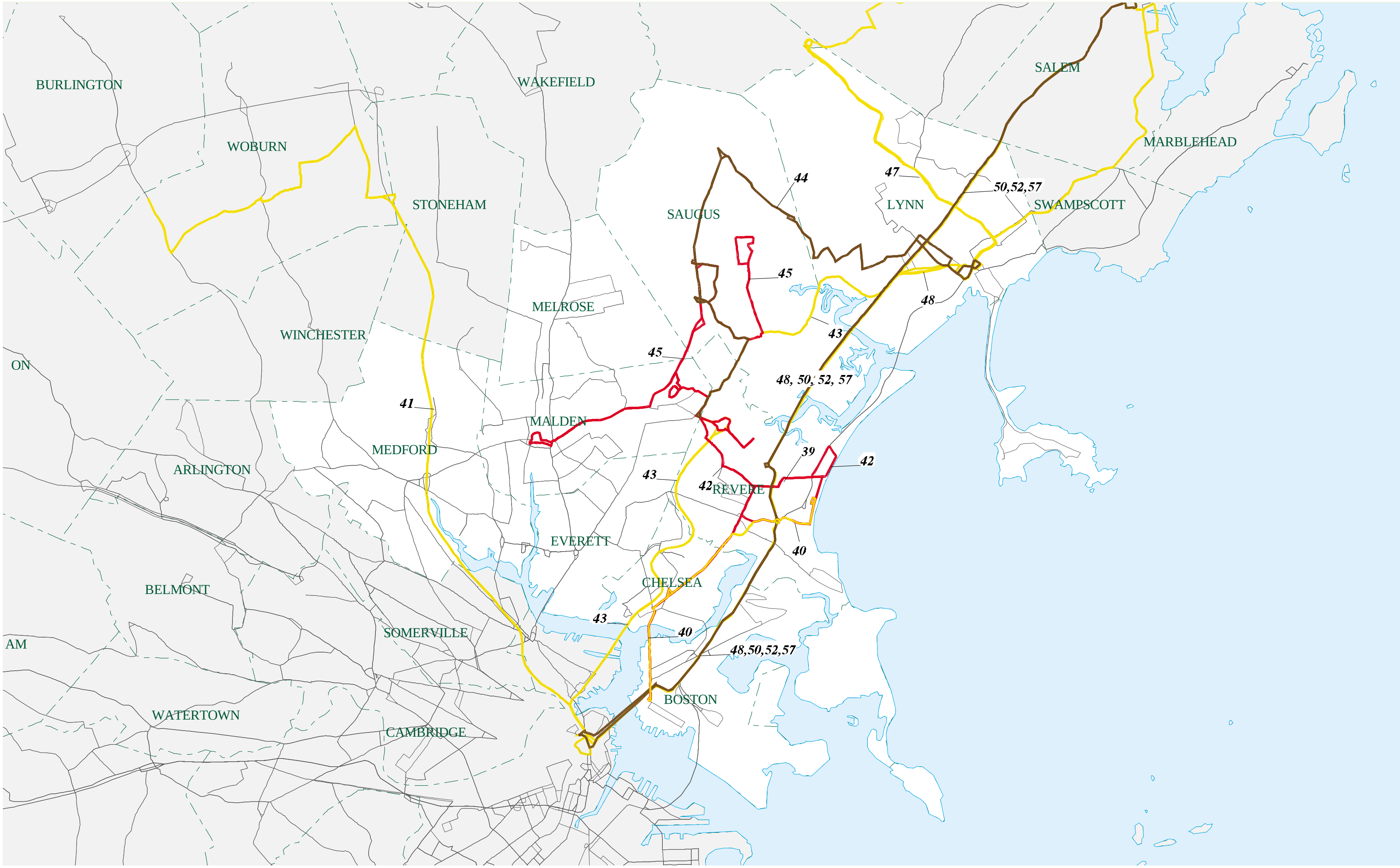
Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
205	Everett	Ferry St.	I	Ferry St. at Shute St./Glendale St.
206	Everett	Main St.	I	Main St. at Tileston St./Oakes St.
207	Everett	Rte. 16	I	Rte. 16 at Second St./Corey St.
208	Everett	Rte. 16	I	Rte. 16 at Vine St.
209	Everett	Rte. 16	I	Rte. 16 at Everett Ave.
210	Everett	Rte. 16	I	Rte. 16 at Spring St.
211	Everett	Rte. 16	I	Rte. 16 at Lewis St.
212	Everett	Rte. 99	I	Rte. 99 at Second St.
213	Everett	Rte. 99	I	Rte. 99 at Chelsea St./Norwood St.
214	Everett	Rte. 99	I	Rte. 99 at Sea St./Shute St.
215	Everett	Rte. 99	I	Rte. 99 at Beacham St.
216	Everett	Rte. 99	I	Rte. 99 at Ferry St.
217	Everett	Rte. 99	I	Rte. 99 at Hancock St./High St.
218	Malden	Beach St.	I	Beach St. at Wellesley St.
219	Malden	Rte. 60	I	Rte. 60 at Commercial St.
220	Malden	Rte. 60	I	Rte. 60 at Jackson St.
221	Malden	Rte. 60	I	Rte. 60 at Main St.
222	Malden	Rte. 60	I	Rte. 60 at Ferry St.
223	Malden	Rte. 60	I	Rte. 60 at Rte. 99
224	Malden	Rte. 60	I	Rte. 60 at Lynn St.
225	Malden	Rte. 99	I	Rte. 99 at Hunting St.
226	Malden, Revere	Rte. 1	I	Rte. 1 at Salem St./Lynn St.
227	Malden, Revere, Saugus	Rte. 1	NB,SB	Salem St./Lynn St. to Rte. 99
228	Revere	Bennington St.	I	Bennington St./State Rd. at Winthrop Ave.
229	Revere	Rte. 1	I	Rte. 1 at Rte. 60 (Copeland Circle)
230	Revere	Rte. 16	I	Rte. 16 at Winthrop Ave./Harris St.
231	Revere	Rte. 1A	I	Rte. 1A at Revere St.
232	Revere	Rte. 1A	I	Rte. 1A at Beach St.
233	Revere	Rte. 1A	I	Rte. 1A at Rte. 60/16 (Bell Circle)
234	Revere	Rte. 60	I	Rte. 60 at Revere St.
235	Revere	Rte. 60	I	Rte. 60 at Hutchinson St.

Index of Roadway Mobility Concerns by Source of Identification, continued

Reference Number on Map	Municipality	Roadway	Direction[a]	Segment[b]
236	Revere	Rte. 60	I	Rte. 60 at Rte. 107 (Brown Circle)
179	Somerville	I-93	I	I-93 at Rte. 28/Mystic Ave.
237	Waltham	Rte. 20	I	Rte. 20 at Rte. 128 Rotary (west end)
238	Waltham	Rte. 20	I	Rte. 20 at Livingston Lane/Sibley Rd.
239	Waltham	Rte. 20	I	Rte. 20 at Cedarwood Ave./Tavern Rd.
240	Waltham	Rte. 20	I	Rte. 20 at Cabot St./Eddy St.
241	Waltham	Rte. 20	I	Rte. 20 at Weston St./South St. (Banks Square)
242	Waltham	Rte. 20	I	Rte. 20 at Prospect St./Hammond St.
243	Waltham	Rte. 20	I	Rte. 20 at Bacon St.
244	Waltham	Rte. 20	I	Rte. 20 at Exchange St.
245	Waltham	Rte. 20	I	Rte. 20 at Moody St.
246	Waltham	Rte. 20	I	Rte. 20 at Lexington St.
247	Waltham	Rte. 20	I	Rte. 20 at Church St./Elm St.
248	Waltham	Rte. 20	I	Rte. 20 at Lyman St.
249	Waltham	Rte. 20	I	Rte. 20 at Newton St.
250	Waltham	Rte. 20	I	Rte. 20 at Linden St.
251	Watertown	Rte. 20	I	Rte. 20 at Mt. Auburn St./Galen St./Arsenal St./Charles River Rd.
252	Watertown	Rte. 20	I	Rte. 20 at Waverly Ave./Myrtle St.
253	Watertown	Rte. 20	I	Rte. 20 at Lexington St.

[a] NB = northbound, SB = southbound, I = intersection

[b] TL = town line, CL = city line



Transit Mobility Concerns by Mode

Inner Core: Upper

Bus:

━ Late arrivals

━ Crowding

━ Late arrivals & crowding

━ Bus service meets standards

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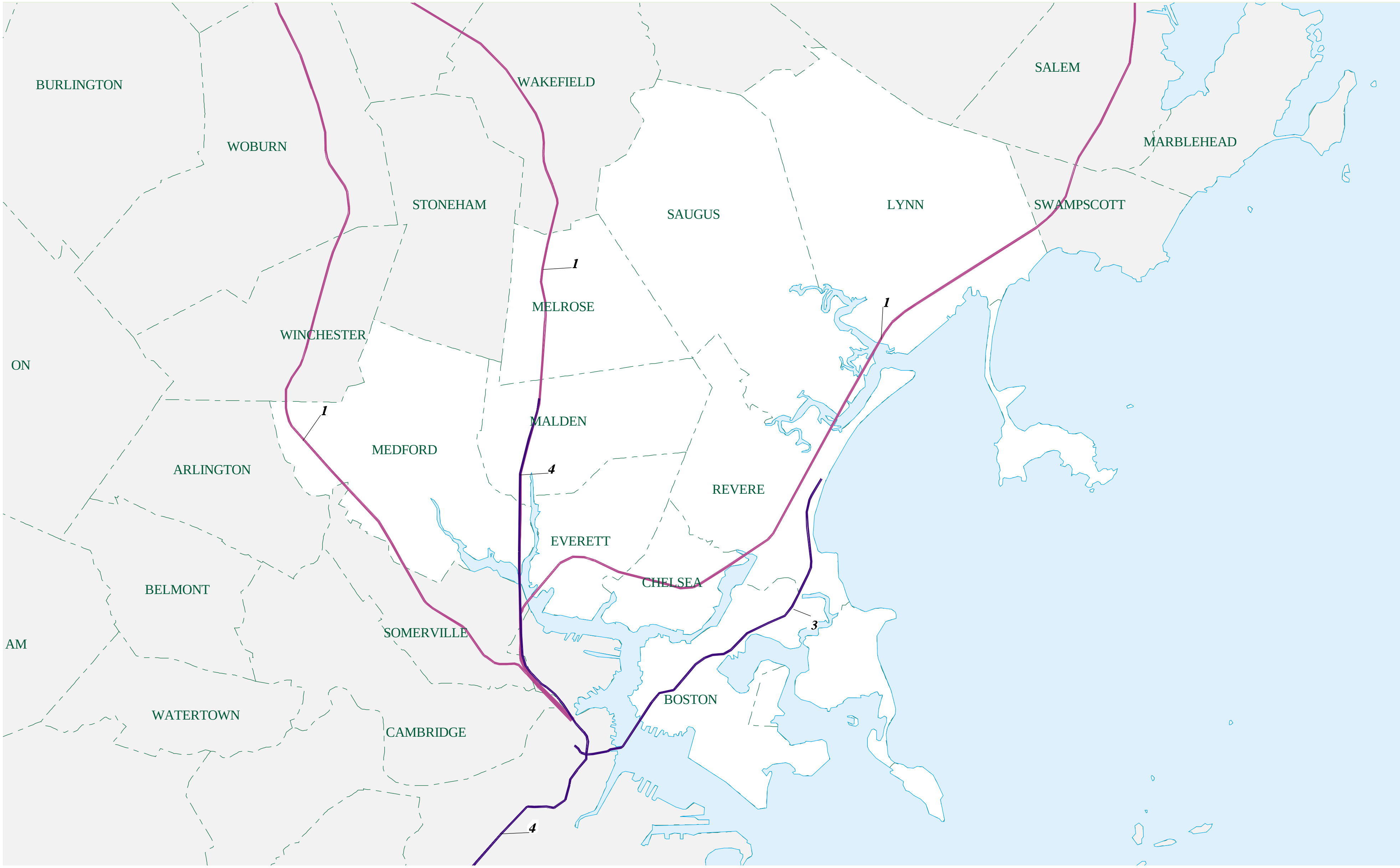


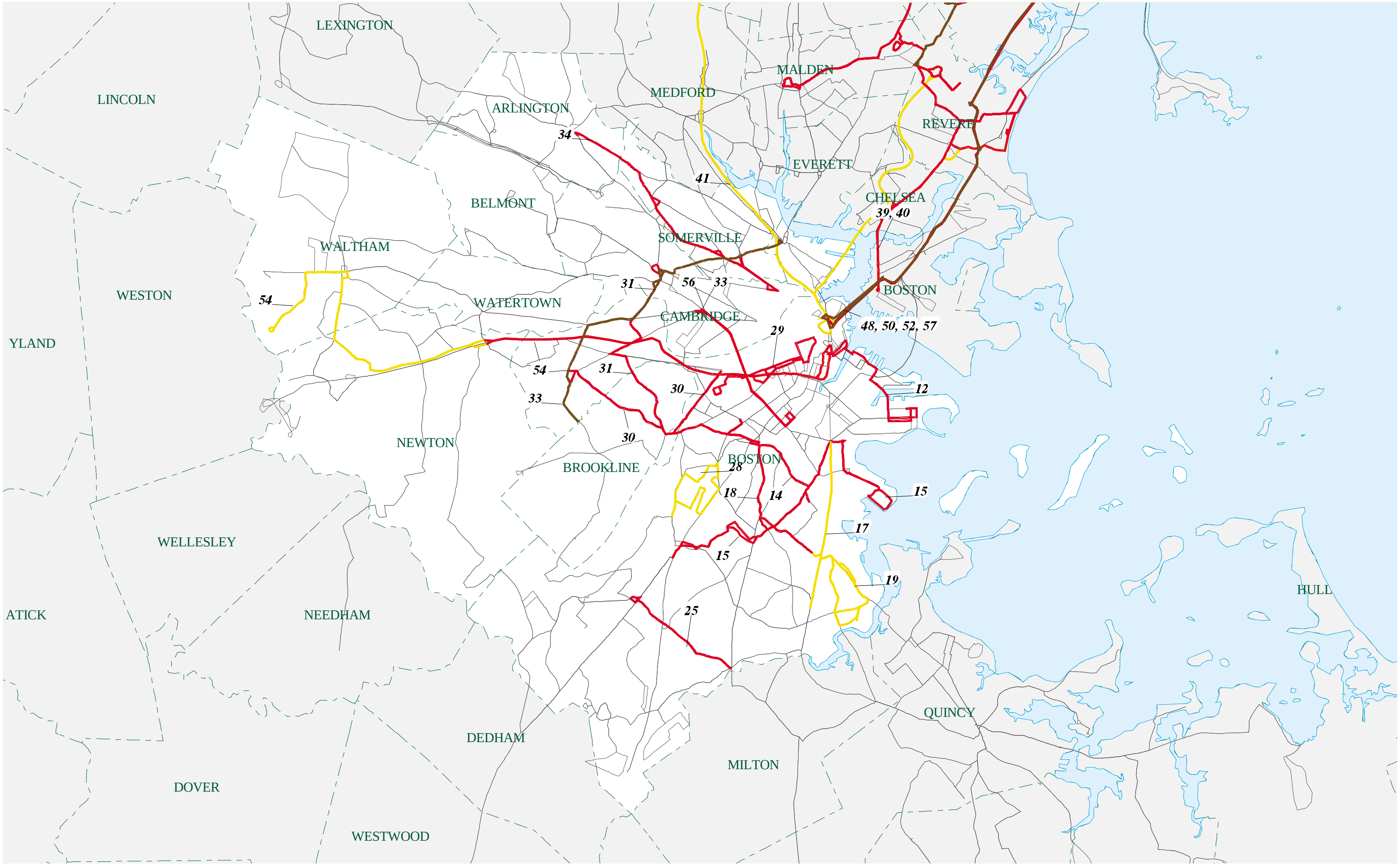
Transit Mobility Concerns by Mode

Inner Core: Upper

Rail:

▬	Commuter Rail
▬	Rapid Transit and Light Rail

CTPS Boston-Region Congestion Management System



Transit Mobility Concerns by Mode

Inner Core: Middle

Bus:

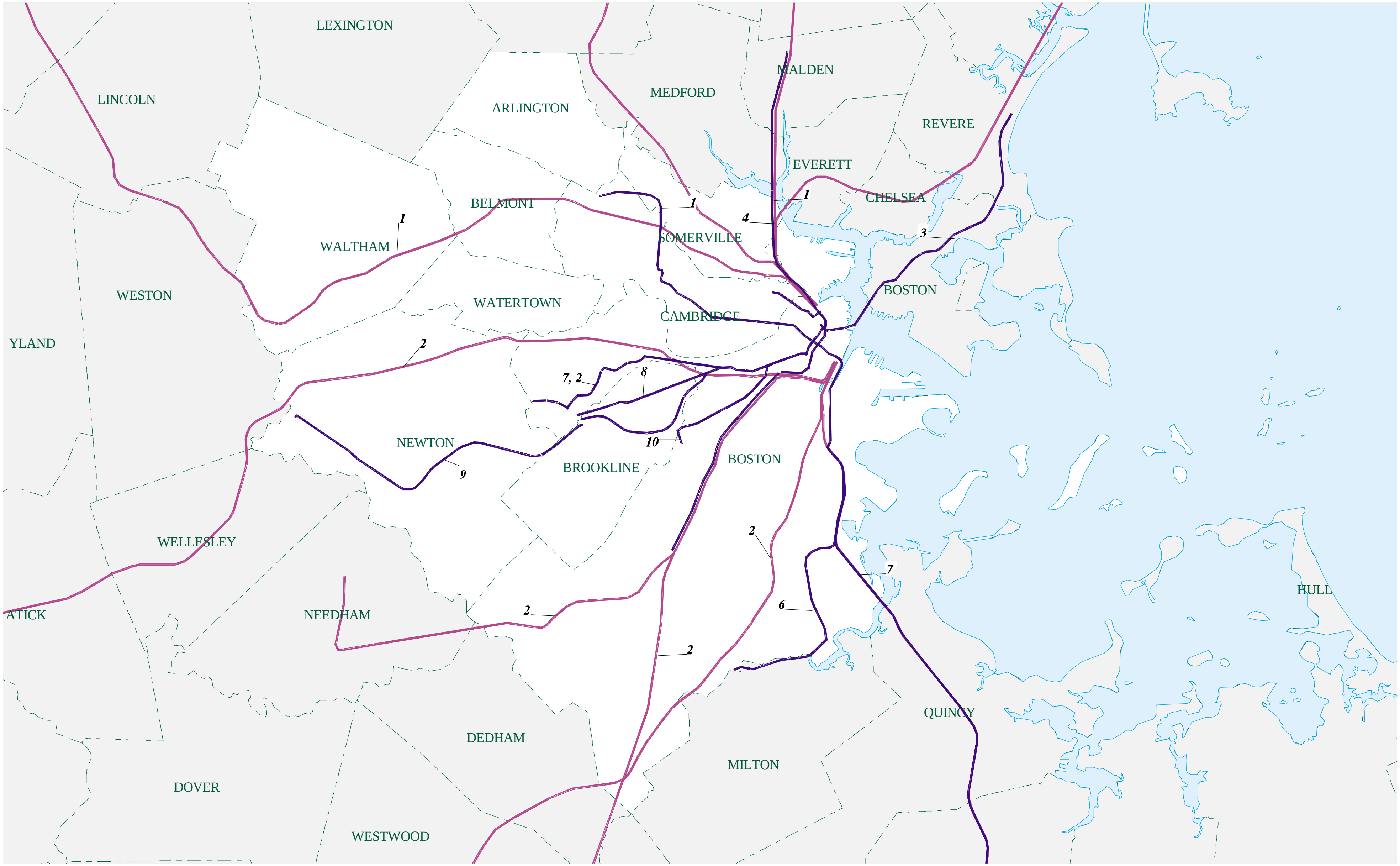
Late arrivals

Crowding

Late arrivals & crowding

Bus service meets standards

CTPS Boston-Region Congestion Management System



Transit Mobility Concerns by Mode

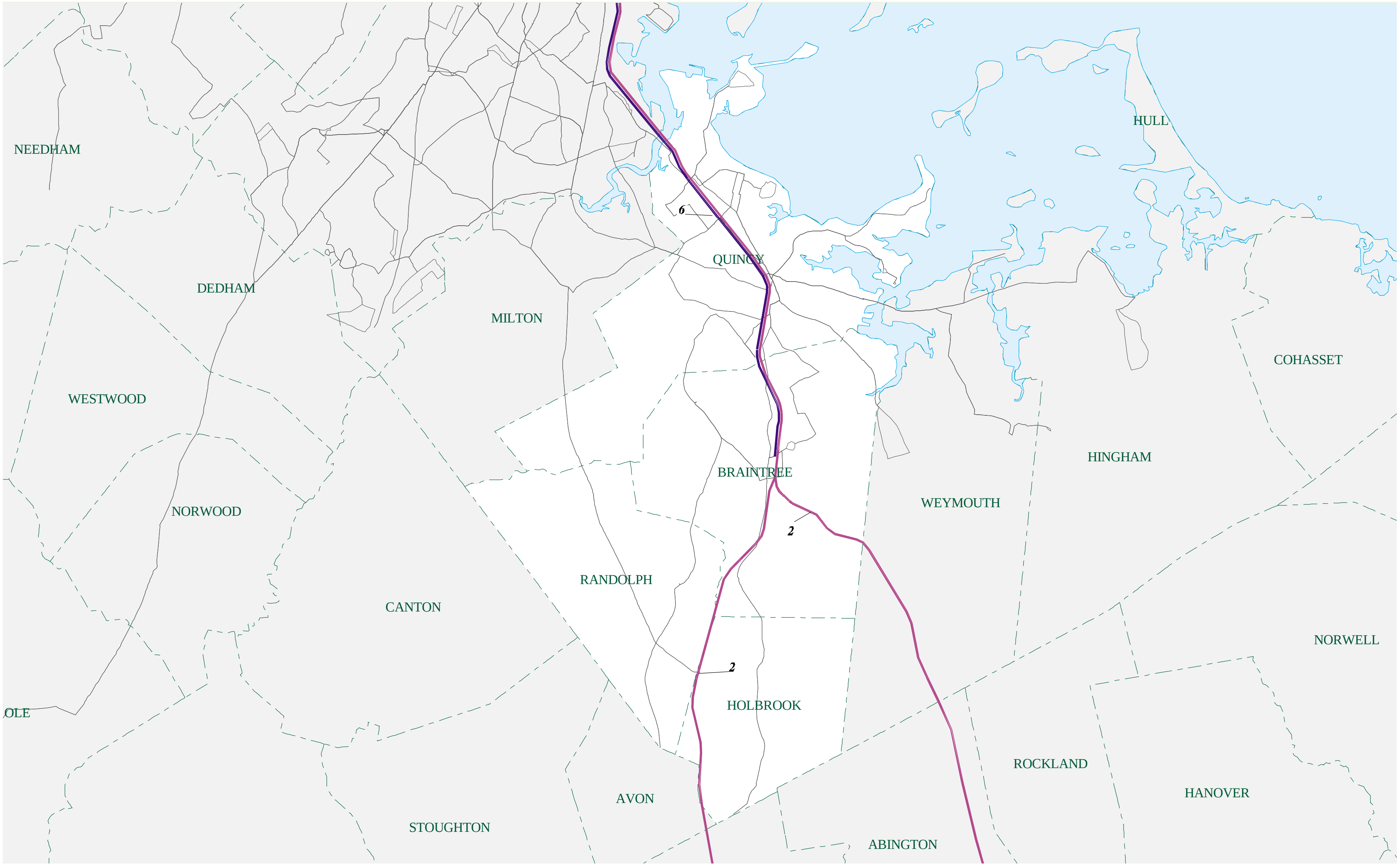
Inner Core: Middle

Rail:

— Commuter Rail

— Rapid Transit and Light Rail

Boston-Region Congestion Management System



Transit Mobility Concerns by Mode

Inner Core: Lower

Rail:

— Commuter Rail

— Rapid Transit and Light Rail

Bus:

— Bus service meets standards

Boston-Region
Congestion
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Index of Transit Mobility Concerns by Mode
Inner Core

Reference Number on Map	Route	Service	Crowding	Late Arrivals
A. Commuter Rail				
1	All commuter rail lines into North Station	NA	11% of peak period trips overcrowded	12% of peak period trips excessively early or late
2	All commuter rail lines into South Station	NA	17% of peak period trips overcrowded	27% of peak period trips excessively early or late
B. Rapid Transit				
3	Blue Line	NA	26% of peak period trips overcrowded	8% of peak period trips excessively early or late
4	Orange Line	NA	4% of peak period trips overcrowded	9% of peak period trips excessively early or late
5	Red Line: Ashmont	NA	*	6% of peak period trips excessively early or late
6	Red Line: Braintree	NA	*	9% of peak period trips excessively early or late
C. Light Rail				
7	Green Line B	NA	22% of peak period trips overcrowded	*
8	Green Line C	NA	35% of peak period trips overcrowded	18% of peak period trips excessively early or late
9	Green Line D	NA	24% of peak period trips overcrowded	20% of peak period trips excessively early or late
10	Green Line E	NA	15% of peak period trips overcrowded	*
D. Bus				
12	7	Local	AM peak trips overcrowded	*

Index of Transit Mobility Concerns by Mode, continued

Reference Number on Map	Route	Service	Crowding	Late Arrivals
14	15	Local	PM peak trips overcrowded	*
15	16	Local	PM peak trips overcrowded	*
17	18	Local	*	61% of trips arriving late at destination
18	19	Local	AM peak trips overcrowded	*
19	20	Local	*	46% of trips arriving late at destination
25	30	Local	AM peak trips overcrowded	*
26	47	Local	PM peak trips overcrowded	*
28	48	Community	*	48% of trips arriving late at destination
29	55	Local	AM peak trips overcrowded	*
30	65	Local	AM peak trips overcrowded	*
31	66	Local	AM peak trips overcrowded	*
33	86	Local	AM peak trips overcrowded	44% of trips arriving late at destination
34	87	Local	PM peak trips overcrowded	*
39	116	Local	AM peak trips overcrowded	*
40	117	Local	*	42% of trips arriving late at destination
41	354	Express	*	70% of trips arriving late at destination
48	400	Local	*	45% of trips arriving late at destination
42	411	Local	AM peak trips overcrowded	*
43	426	Local/Express	*	40% of trips arriving late at destination
44	429	Local	*	45% of trips arriving late at destination
45	430	Local	AM peak trips overcrowded	*
47	436	Local	*	40% of trips arriving late at destination

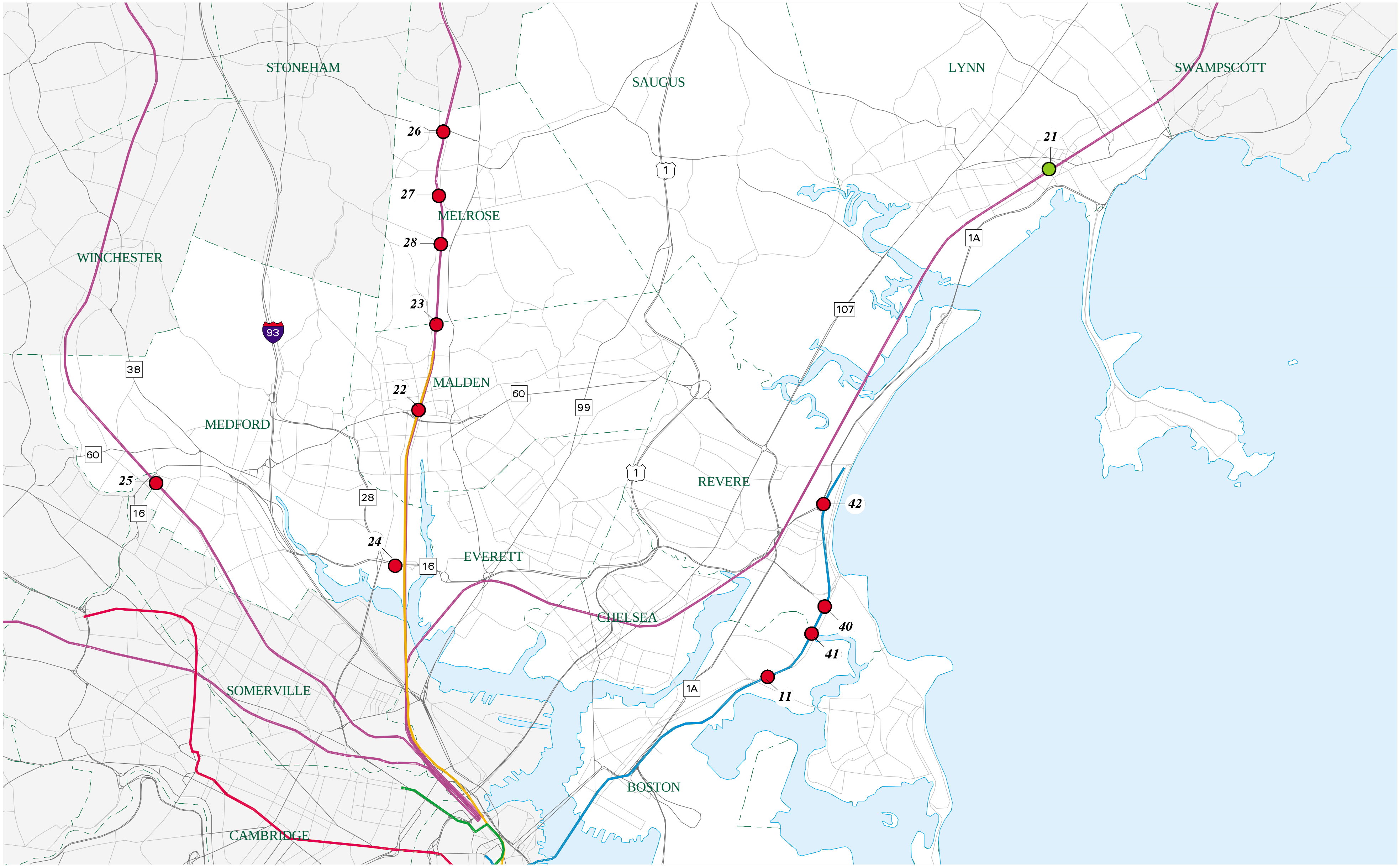
Index of Transit Mobility Concerns by Mode, continued

Reference Number on Map	Route	Service	Crowding	Late Arrivals
50	450	Local/Express	∗	60% of trips arriving late at destination
52	491	Local	∗	50% of trips arriving late at destination
57	455	Local	PM peak trips overcrowded	∗
54	553	Express	∗	57% of trips arriving late at destination
56	701	Local	AM peak trips overcrowded	∗

NA = Not applicable

∗ No concern exists.

† Map not available at the time of this printing.



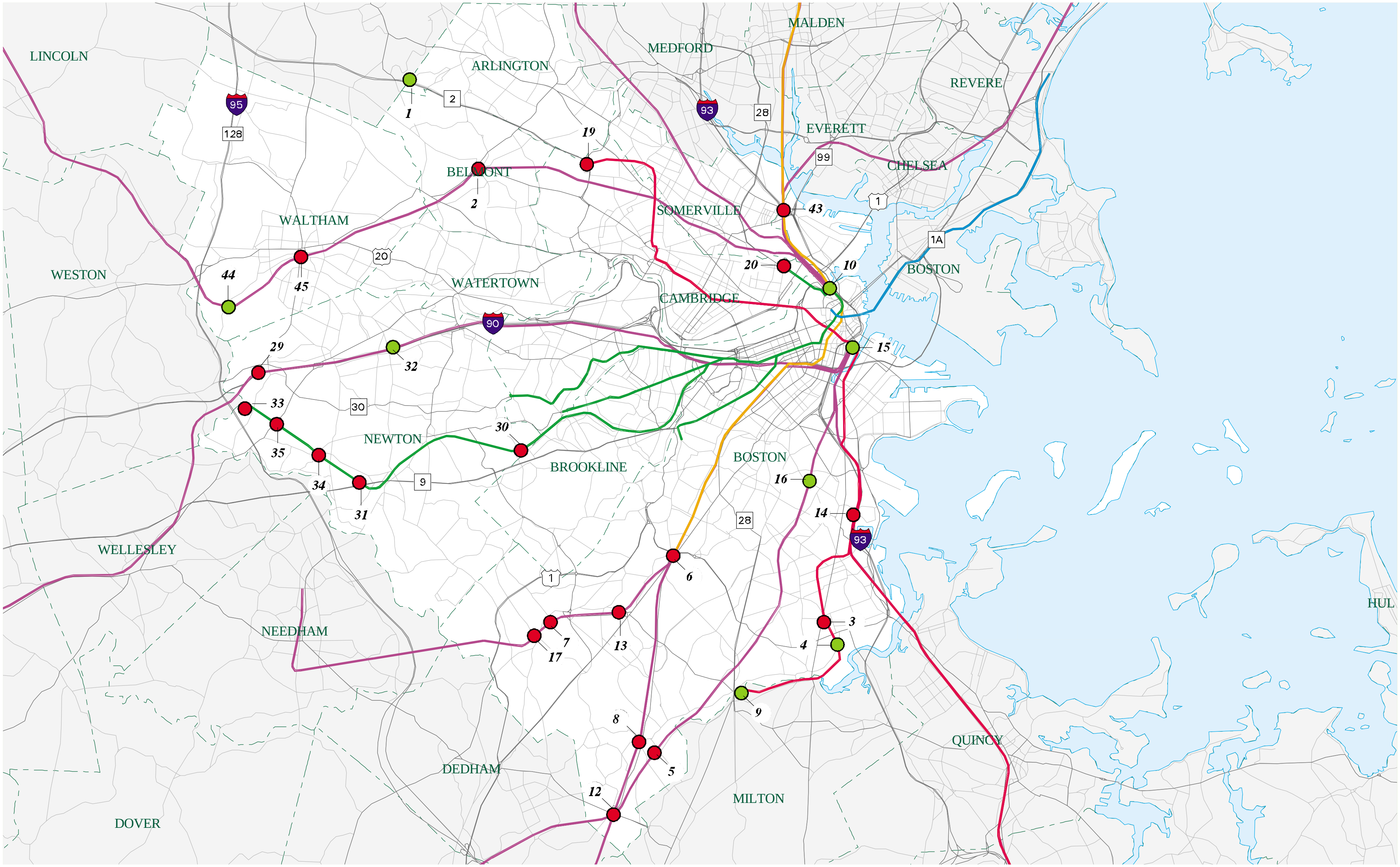
Park- and- Ride Lot Concerns by Type

Inner Core: Upper

Type of Concern:

- 🟥 Full
- 🟩 Underutilized

Boston-Region Congestion Management System



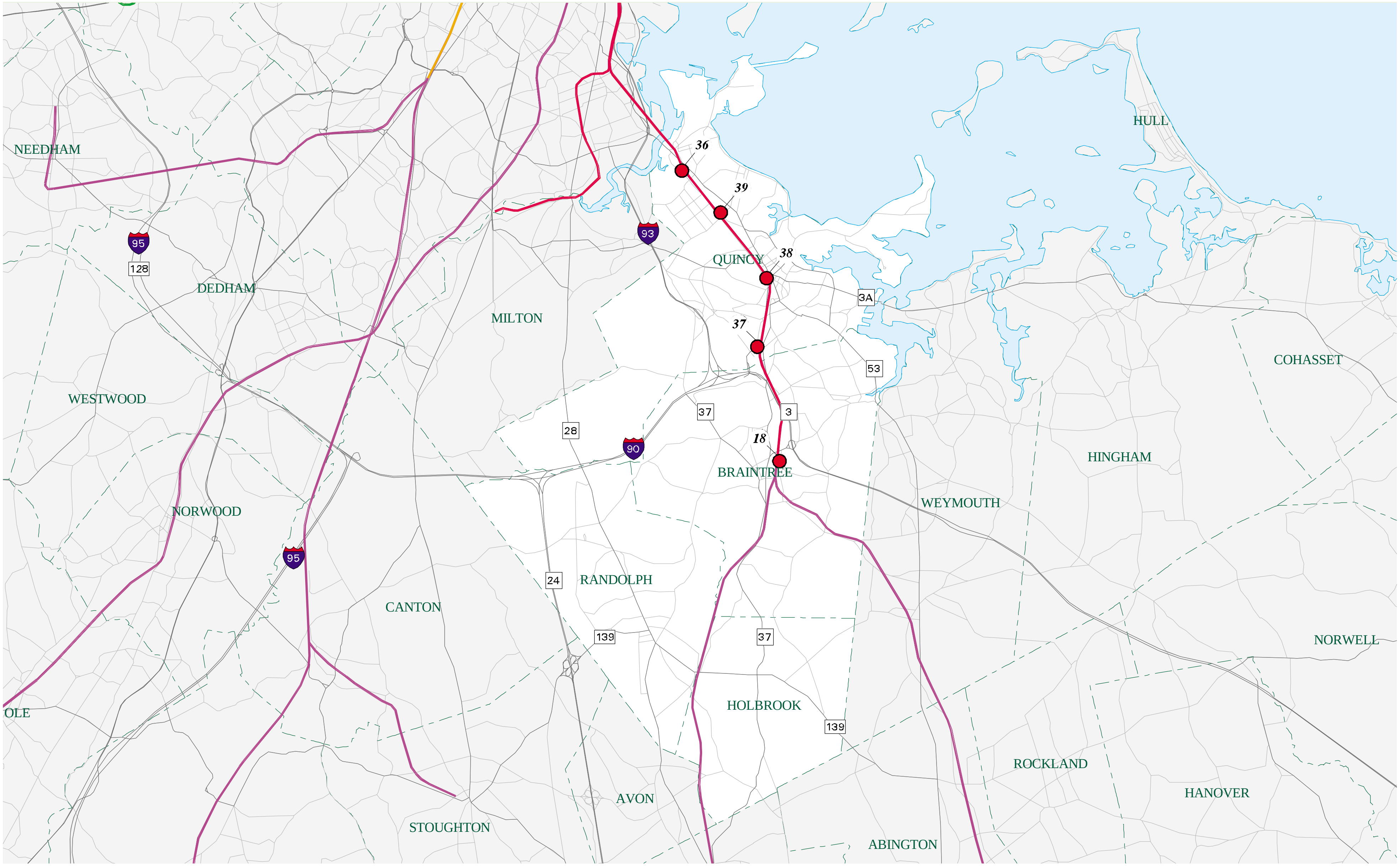
Park- and- Ride Lot Concerns by Type

Inner Core: Middle

Type of Concern:

- ● Full
- ● Underutilized

CTPS Boston-Region Congestion Management System



Park- and- Ride Lot Concerns by Type

Inner Core: Lower

Type of Concern:

🟥 Full
🟩 Underutilized

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Index of Park-and-Ride Lot Concerns by Type
Inner Core

Reference Number on Map	Municipality	Park-and-Ride Lot	Service(s)	Concern
A. Full Lots				
2	Belmont	Belmont Center	Fitchburg commuter rail	Lot 100% full
3	Boston	Ashmont	Red Line	Lot 100% full
5	Boston	Fairmount	Attleboro/Stoughton commuter rail	†
6	Boston	Forest Hills	Orange Line	Lot 118% full
7	Boston	Highland	Needham commuter rail	†
8	Boston	Hyde Park	Attleboro/Stoughton commuter rail	Lot 90% full
11	Boston	Orient Heights	Blue Line	Lot 92% full
12	Boston	Readville	Franklin commuter rail	†
13	Boston	Roslindale Village	Needham commuter rail	Lot 100% full
14	Boston	Savin Hill	Red Line	Lot 110% full
17	Boston	West Roxbury	Needham commuter rail	Lot 100% full
18	Braintree	Braintree	Red Line	Lot 103% full
19	Cambridge	Alewife	Red Line	Lot 108% full
20	Cambridge	Lechmere	Green Line	Lot 107% full
22	Malden	Malden Center	Orange Line	Lot 129% full
23	Malden	Oak Grove	Orange Line	Lot 110% full
24	Medford	Wellington	Orange Line	Lot 106% full
25	Medford	West Medford	Lowell commuter rail	Lot 100% full
26	Melrose	Melrose Highlands	Haverhill commuter rail	Lot 100% full
27	Melrose	Melrose/Cedar Park	Haverhill commuter rail	Lot 100% full
28	Melrose	Wyoming Hill	Haverhill commuter rail	Lot 70% full
29	Newton	Auburndale	Worcester/Framingham commuter rail	Lot 99% full
30	Newton	Chestnut Hill	Green Line	Lot 110% full
31	Newton	Eliot	Green Line	Lot 100% full
33	Newton	Riverside	Green Line	†
34	Newton	Waban	Green Line	Lot 106% full
35	Newton	Woodland	Green Line	Lot 105% full
36	Quincy	North Quincy	Red Line	Lot 101% full

Index of Park-and-Ride Lot Concerns by Type, continued

Reference Number on Map	Municipality	Park-and-Ride Lot	Service(s)	Concern
37	Quincy	Quincy Adams	Red Line	Lot 100% full
38	Quincy	Quincy Center	Red Line	†
39	Quincy	Wollaston	Red Line	Lot 113% full
40	Revere	Beachmont	Blue Line	†
41	Revere	Suffolk Downs	Blue Line	†
42	Revere	Wonderland	Blue Line	Lot 101% full
43	Somerville	Sullivan Square	Orange Line	Lot 128% full
45	Waltham	Waltham	Fitchburg	Lot 93% full
B. Underutilized Lots				
1	Arlington	Arlington	Car/Van/MBTA Bus	Lot 13% full
4	Boston	Cedar Grove	Red Line	Lot 0% full
9	Boston	Mattapan	Red Line	Lot 18% full
10	Boston	North Station	multiple lines	Lot 10% full
15	Boston	South Station	multiple lines	Lot 25% full
16	Boston	Uphams Corner	Attleboro/Stoughton commuter rail	Lot 18% full
21	Lynn	Lynn	Rockport/Newburyport commuter rail	Lot 31% full
32	Newton	Newtonville	Worcester/Framingham	Lot 34% full
44	Waltham	Brandeis/Roberts	Fitchburg commuter rail	Lot 42% full

† Actual percent of spaces utilized for the lot is unknown.

III. IMPROVEMENTS ALREADY IN PROGRESS

A. Overview of Regional Inventory Process

The step in the CMS process that is described in this chapter is the inventorying of most of the public-sector transportation studies and projects that address any of the mobility concerns identified in the preceding step of the CMS process. Three categories of activity are inventoried: TIP projects, active CTPS planning studies, and active studies and projects of state agencies such as the MBTA and MassHighway.[11] The method by which the studies and projects were selected for inclusion in the CMS report and organized for presentation is described below.

1. TIP Projects

TIP projects were obtained from the TIP database maintained by CTPS and last updated in September 1999 for the fiscal year 2000-2005 TIP published in October 1999. The TIP database is CTPS's project information tracking system, which briefly describes each known project and tracks its status from the time it is initiated until it goes out to bid.[12]

Not all of the TIP projects in the database were selected for inclusion in the CMS. A subset was selected that includes only those projects that have a direct impact on congestion, such as roadway reconstruction, additional travel lanes, and signal upgrades. Bridge replacements and resurfacing projects were not included in the CMS because their benefits to traffic flow are usually less tangible.[13]

CMS TIP projects are grouped into three categories:

1. Programmed in TIP, advertised, or completed
2. Not currently programmed in TIP
3. Appendix H or Enhancement project

Appendix H is the supplemental list of local and state projects. These projects are in various stages of design, all waiting to be programmed in the TIP, once ready. Enhancement projects are programmed, nonmotorized projects that are funded through the federal Transportation Enhancements Program.

2. CTPS Planning Studies

This category consists of all CTPS planning studies currently underway or completed for the Boston MPO or one of its members within the past ten years in which CTPS was the principal analyst.[14] A CTPS study often constitutes the first phase of a project's development. Therefore, a ten-year history was selected, because it sometimes takes that long for a recommendation from a CTPS planning study to make its way through the design and/or programming process to implementation. If a recommendation from a study that is older than ten years has not shown up somewhere else in the planning process (e.g., as a TIP project) then the recommendation (and the study) is considered out-of-date.

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[11] It is recognized that the inventory of improvements already in progress does not cover all projects affecting mobility underway in the Boston MPO region. For example, private development projects and locally sponsored planning projects also affect mobility. These types of projects were omitted from the CMS due to the high cost that would be incurred to research and document them all for the entire Boston region.

[12] Information regarding projects is obtained directly from MassHighway, MAPC (providing information on behalf of cities and towns), the MBTA, Massport, and any other local or state agency that utilizes federal or state, highway or transit funds.

[13] Bridge reconstruction projects that added travel lanes were included in the 2000 CMS.

[14] CTPS plays a technical support role in numerous state agency planning projects where the state agency is responsible for developing alternatives and making recommendations. In the CMS, these state projects are included not under the CTPS Planning Studies category, but are found under the TIP Projects or Other Ongoing Activities category.

CTPS planning studies are grouped into three categories:

1. Intersection or park-and-ride lot study
2. Rail, bicycle, or roadway corridor study
3. Area of concentrated study

3. Other Ongoing Activities

These studies and projects that are not in the TIP database and do not have CTPS as the principal analyst. They primarily consist of studies and projects being conducted by the MBTA and MassHighway in-house planning departments. Studies and projects performed by private consultants, but managed by the state, are included in this category as well.

Other ongoing activities are grouped into six categories:

1. Bus
2. Rail
3. Roadway(s)
4. Park-and-ride
5. Commuter boat
6. Other transit

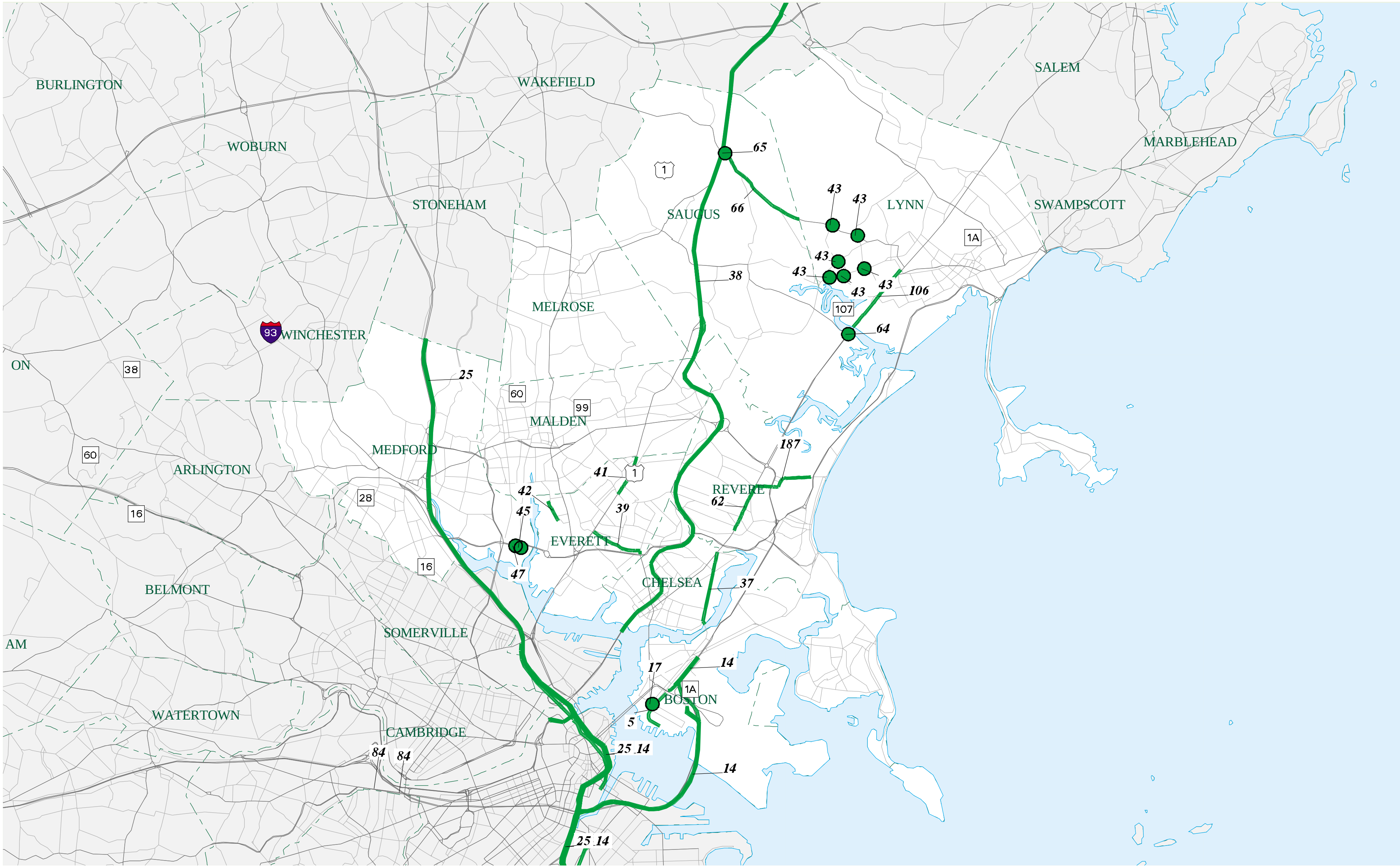
“Other transit” includes rapid transit, light rail, and multi-transit-technology studies and projects, as well as studies and projects where alternate transit technologies are still being evaluated.

D. Improvements Already in Progress in the Inner Core Subregion

The improvements already in progress for the Inner Core subregion are summarized in the maps and indexes on the following pages. For each of the three categories of studies and projects inventoried by the CMS, there is a set of maps accompanied by an index. For the convenience of the reader, the subregion has been divided into three subareas—upper, middle, and lower—and each set of maps includes at least one for each subarea (more than one when necessary to show the information clearly). The sets of maps are:

- Projects by 2000-2005 TIP Status
  - Inner Core: Upper (two maps)
  - Inner Core: Middle (two maps)
  - Inner Core: Lower
- CTPS Planning Study Locations
  - Inner Core: Upper
  - Inner Core: Middle
  - Inner Core: Lower
- Other Ongoing Activities by Type
  - Inner Core: Upper
  - Inner Core: Middle
  - Inner Core: Lower

The maps show the location of and provide basic information about each study or project, and reference their accompanying index, which provides more detailed information.

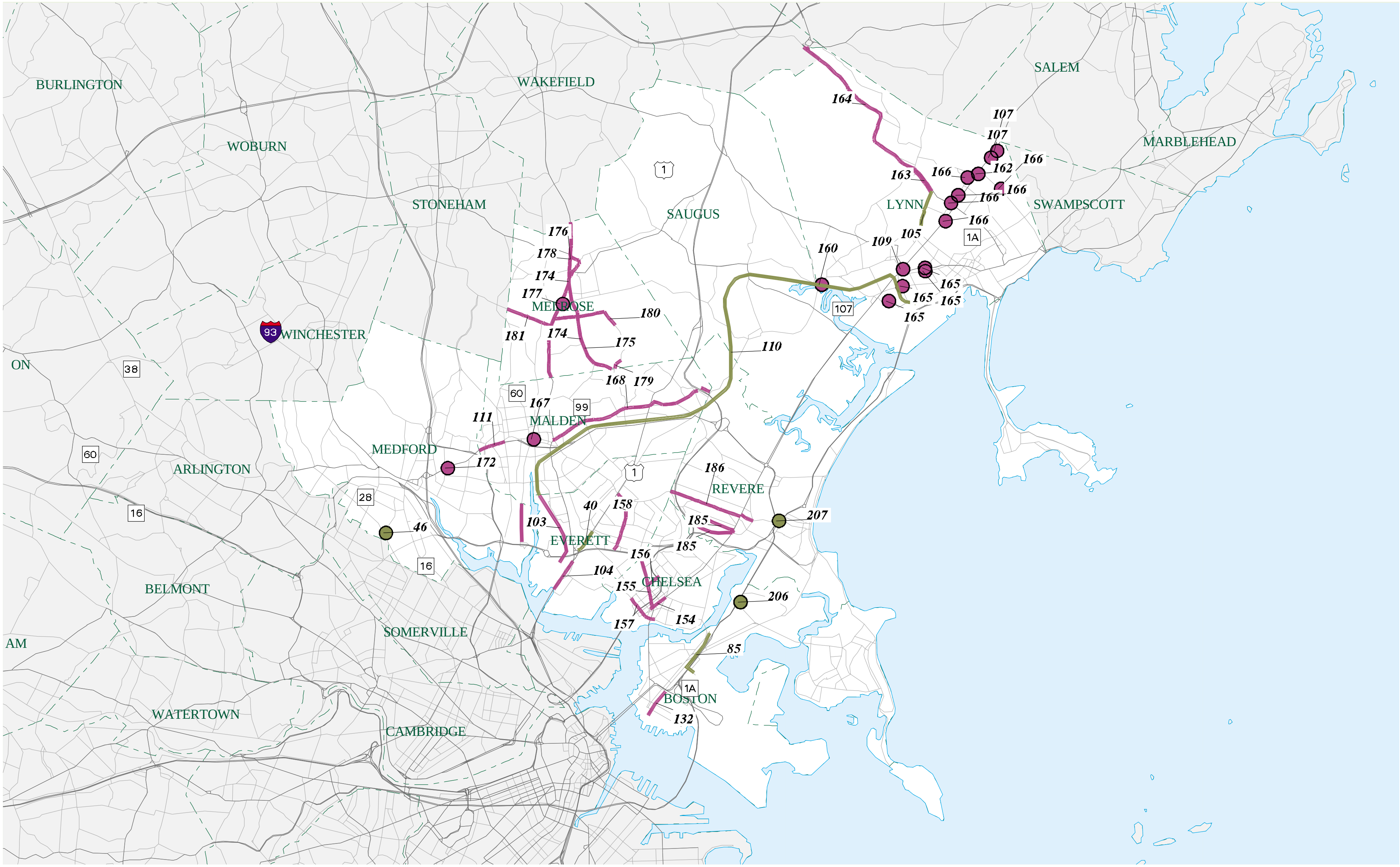


Projects by 2000- 2005 TIP Status

Inner Core: Upper

● ═ Programmed in the TIP, advertised, or completed

CTPS Boston-Region Congestion Management System



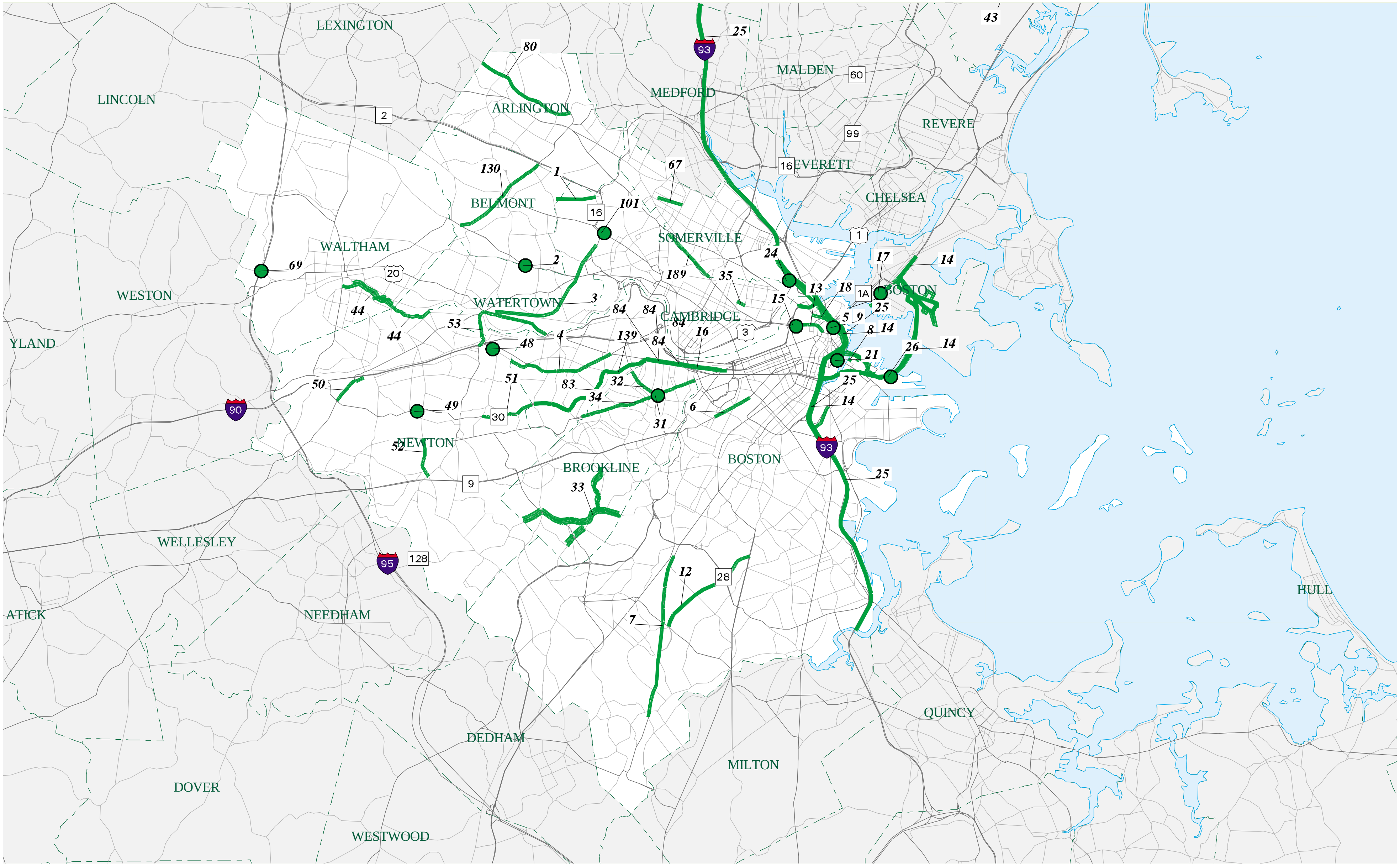
Projects by 2000- 2005 TIP Status

Inner Core: Upper

● ▬ Not currently programmed in the TIP

● ▬ Appendix H or Enhancement Project

CTPS Boston-Region Congestion Management System

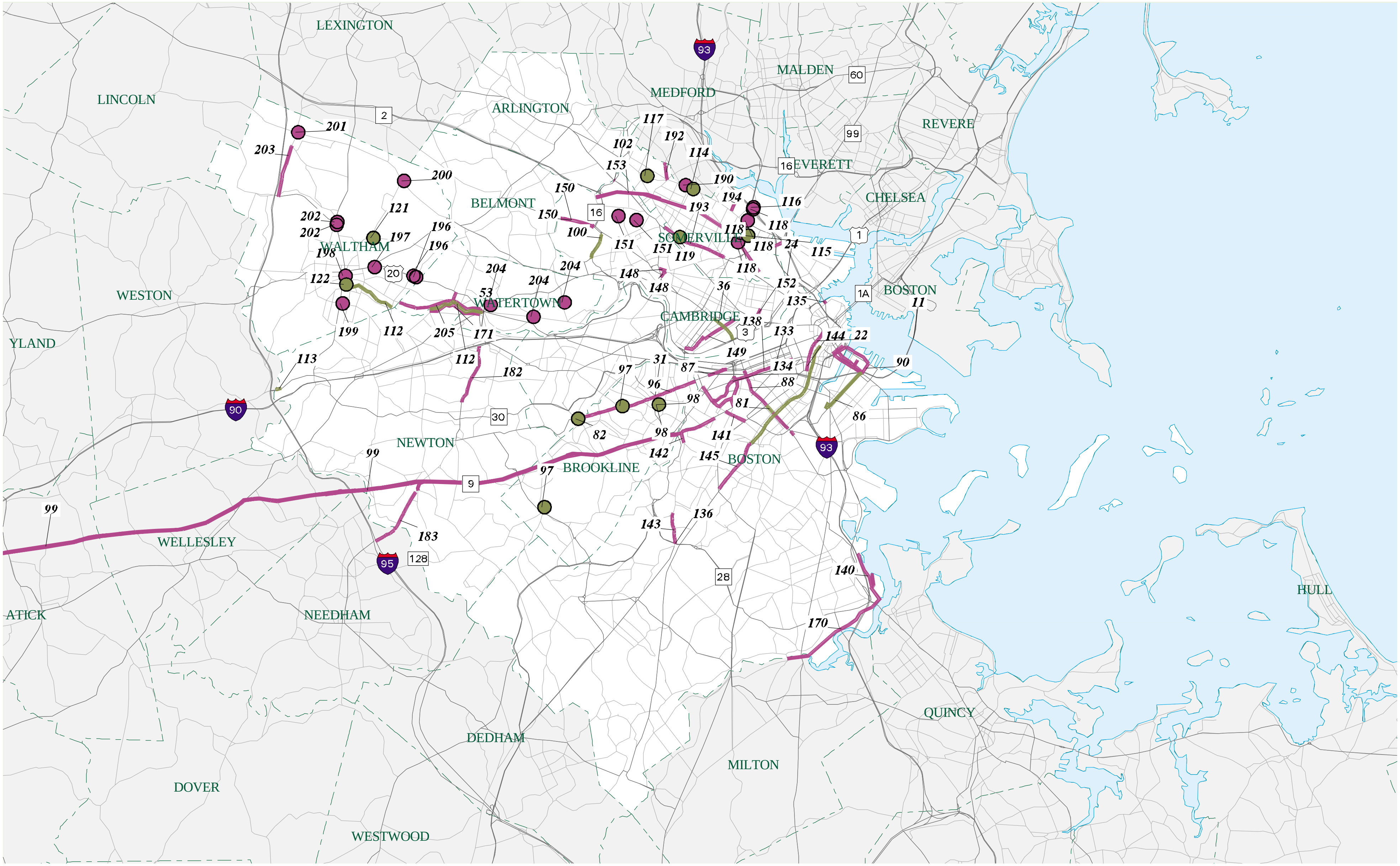


Projects by 2000- 2005 TIP Status

Inner Core: Middle

● ═ Programmed in the TIP, advertised, or completed

CTPS Boston-Region Congestion Management System

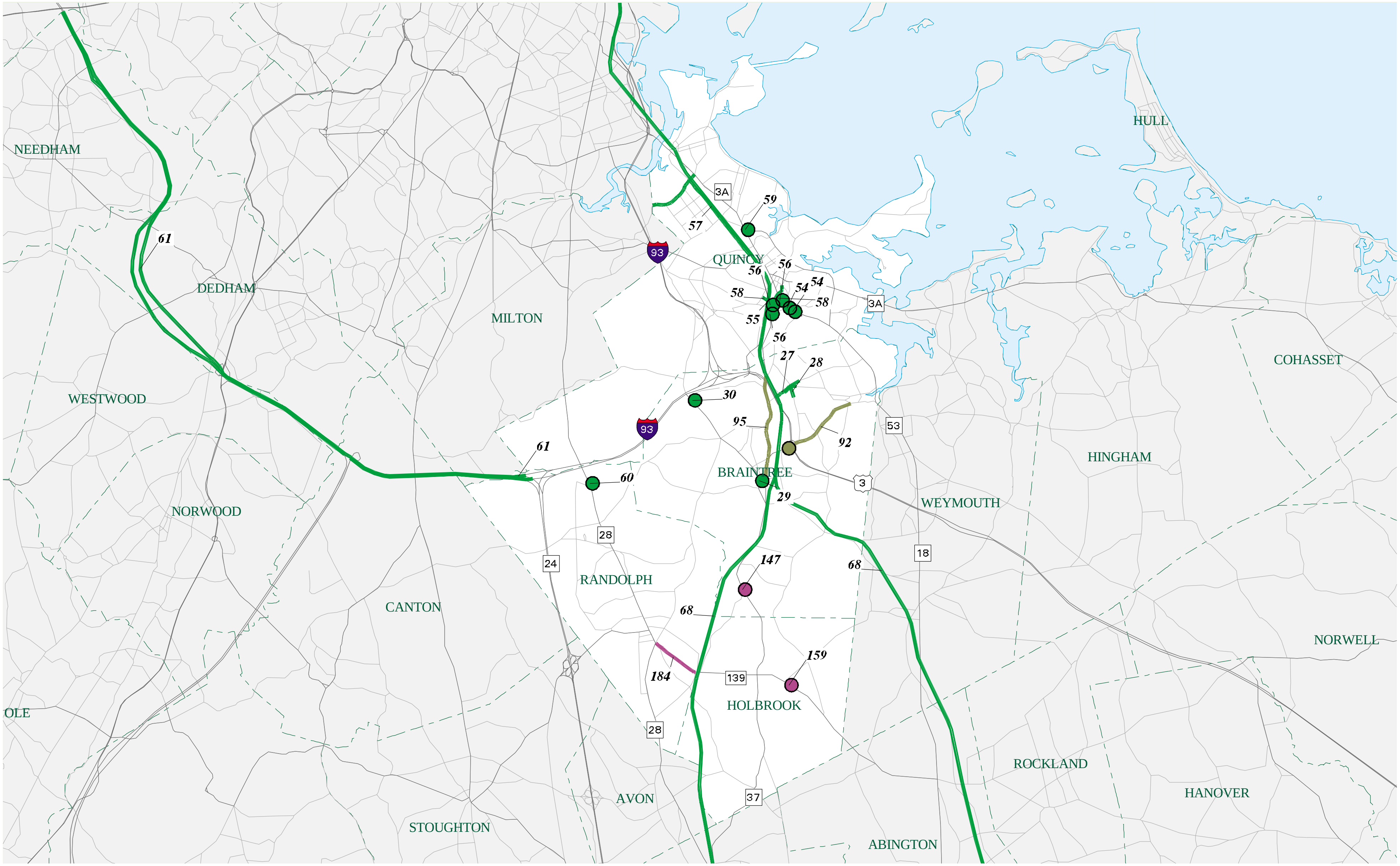


Projects by 2000- 2005 TIP Status

Inner Core: Middle

● — Not currently programmed in the TIP
● — Appendix H or Enhancement Project

CTPS Boston-Region Congestion Management System



Projects by 2000- 2005 TIP Status

Inner Core: Lower

● — Programmed in the TIP, advertised, or completed
● — Not currently programmed in the TIP
● — Appendix H or Enhancement Project

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Index of Projects by 2000-2005 TIP Status
Inner Core

Reference Number on Map	Municipality	Project	TIP ID No.
A. Projects Already Constructed or Advertised			
1	Arlington, Cambridge	Minuteman Bikeway Extension	601298
2	Belmont	Trapelo Rd.-Belmont St. intersection improvements	004831
4	Boston	Cambridge St., Washington St. and Tremont St. reconstruction	601272
5	Boston	East Boston Greenway	602347
6	Boston	Huntington Ave. reconstruction	601046
7	Boston	Hyde Park Ave. reconstruction	601509
8	Boston	Northern Ave. connector roads, Phase 1	053001
9	Boston	Boston City Hall traffic signal upgrade	601822
Not shown	Boston	Signal Control Replacement at 120 locations	600184
18	Boston	Merrimac St. reconstruction	601508
25	Boston Region	I-93 ATMS Surveillance Equipment	601807
27	Braintree	Elm St. reconstruction	600315
28	Braintree	Elm St, Adams St. and Middle St. reconstruction	024005
29	Braintree	Franklin St.-Washington St. traffic signal installation	601394
30	Braintree	Rte. 37-I-93 signage replacement	601491
31	Brookline	Coolidge Corner transit facilities rehabilitation	DM0102
32	Brookline	Harvard St. reconstruction	601128
33	Brookline	Newton St., Clyde St. and Grove St. safety improvements	601828
35	Cambridge	Kendall Square, Phase 1	600349
38	Chelsea to Danvers	Rte. 1 signage upgrade	601215
39	Everett	Chelsea St. and Everett St. reconstruction	601147
48	Newton	Park St.-Tremont St. intersection improvements	601283
50	Newton	Rte. 16 reconstruction	600894
53	Newton, Watertown	Centre St. and Galen St. reconstruction	601286
54	Quincy	Quincy Ave. safety improvements at 2 intersections	601752
55	Quincy	Quincy Center Concourse, Phase 1	601942A
56	Quincy	Safety improvements at 3 intersections	601544
57	Quincy	Safety improvements at 5 intersections	601545

Index of Projects by 2000-2005 TIP Status, continued

Reference Number on Map	Municipality	Project	TIP ID No.
60	Randolph	Rte. 28-Russ St.-Scanlon Dr. traffic signal installation	107301
62	Revere	Rte. 107 closed loop system	601088
64	Saugus	Rte. 107-Ballard St. intersection improvements	131383
66	Saugus	Walnut St. reconstruction	180529
67	Somerville	Bicycle facility lighting	601034
68	South Shore	Old Colony Restoration	DMT028
69	Waltham	Rte. 117-Bear Hill Rd. intersection improvements	600644
10	Watertown	Rte. 20 reconstruction	600745

B. Programmed in Current TIP

Reference Number on Map	Municipality	Project	TIP ID No.
80	Arlington	Rte. 2A reconstruction	602286
3	Belmont, Cambridge, Somerville, Watertown	Watertown Branch Bicycle Facility	180700
130	Belmont	Rte. 60 reconstruction	601790
Not shown	Boston	Airport Intermodal Transit Connector (AITC)	DMT032
12	Boston	American Legion Highway reconstruction	DM0156
13	Boston	Cambridge St. reconstruction	601273
14	Boston	Central Artery reconstruction	195001
15	Boston	Charles St. MBTA Station	DMT033
16	Boston	Commonwealth Ave. reconstruction, Phases 1-5	DM0209 DM0213
17	Boston	Eastie Express Shuttle	DMS001
Not shown	Boston	Signal Control Replacement at 44 locations	DM0009
Not shown	Boston	South Boston Piers Transitway	DMT005
21	Boston	South Station pedestrian connector	DMT034
26	Boston Region	ITS Center	602465
34	Brookline	Beacon St. safety improvements	601183
101	Cambridge	Alewife Brook Pkwy.-Fresh Pond Pkwy. bicycle and pedestrian improvements	DM0126
37	Chelsea	Eastern Ave. reconstruction	601199
41	Everett	Rte. 99 reconstruction	602383
42	Everett	Tremont St. reconstruction	602088

Index of Projects by 2000-2005 TIP Status, continued

Reference Number on Map	Municipality	Project	TIP ID No.
43	Lynn	Traffic signal upgrade at 6 locations	601136
106	Lynn	Rte. 107 reconstruction	601392
44	MDC	Charles River Restoration, Phase 1	DM0043
45	Medford	Wellington Station People Mover	DMT025
49	Newton	Newton Nexus	DMT026
51	Newton	Commonwealth Ave. reconstruction, Phase 3	601899
52	Newton	Walnut St. widening	601704
58	Quincy	Quincy Center Concourse, Phases 2 & 3	601942B
59	Quincy	Rte. 3A-Southern Artery traffic signal installation	602237
61	Randolph to Wellesley	Rte. 128 Add-a-Lane	086920
187	Revere	Revere St. reconstruction	601934
65	Saugus	Rte. 1-Walnut St. interchange improvements	601513
189	Somerville	Beacon St. reconstruction	601820
70	Waltham	Calvary St. footbridge	DM0076

C. Not Currently Programmed

Reference Number on Map	Municipality	Project	TIP ID No.
81	Boston	Chester Square Restoration	DM0128
82	Boston	Cleveland Circle town center	DM0131
85	Boston	East Boston Haul Rd.	DM0004
86	Boston	Forsyth St. bicycle and pedestrian improvements	DM0005
Not shown	Boston	Signal control replacement at 54 locations	DM0008
206	Boston	Rte. 1A-Boardman St. grade separation	DM0200
92	Braintree	Union St. reconstruction	602593
93	Braintree	Rte. 3-Union St. traffic signal improvements	600172
95	Braintree	Washington St. reconstruction	602595
97	Brookline	Fire Stations 6 (Washington St.) and 7 (Hammond St.) intersection improvements	DM0032
98	Brookline	Harvard St.-Marion St. traffic signal improvements	DM0033
100	Cambridge	Fresh Pond Corridor bicycle facility	DM0035
105	Lynn	Boston St. intersection improvements	600028
110	Lynn, Malden, Revere, Saugus	Bike-to-the-Sea, Phase 2	DM0140

Index of Projects by 2000-2005 TIP Status, continued

Reference Number on Map	Municipality	Project	TIP ID No.
112	MDC	Charles River Restoration, Phase 2	DM0101
113	Newton	Rte. 30 reconstruction	600932
207	Revere	Rte. 1A-Rte. 60 (Mahoney Circle) grade separation	DM0201
114	Somerville	Broadway-Cedar Square intersection improvements	DM0063
115	Somerville	Cross St-Pearl St intersection improvements	DM0064
117	Somerville	Powderhouse Blvd.-Packard Ave. traffic signal upgrade	DM0065
119	Somerville	Somerville Ave.-Elm St. intersection improvements	DM0066
121	Waltham	Beaver St-Forest St. intersection improvements	602934
122	Waltham	Moody St. Bridge improvements	DM0111

D. Enhancement Projects

Reference Number on Map	Municipality	Project	TIP ID No.
96	Brookline	Beacon St. bicycle, pedestrian, and trolley enhancements	DM0136
103	Everett	Bike-to-the-Sea, Phase 1	DM0118
131	Belmont, Cambridge, Somerville	Somerville-Cambridge Bicycle Facility	DM0146
132	Boston	Conrail Corridor Bicycle Facility	602933
133	Boston	Dartmouth St. Pedestrian Plaza	602898
134	Boston	Fenway-Southwest Corridor Bicycle/Pedestrian Paths	DM0127
135	Boston	North Washington St. footbridge	602931
136	Boston	South St. footpath	601300
137	Boston	Southcove Harbor Trail	DM0129
148	Cambridge	Cambridge Common bicycle and pedestrian path reconstruction	DM0103
154	Chelsea	Chelsea Center bicycle and pedestrian improvements	602348
170	MDC	Neponset River Bikeway	DM0120
171	MDC	Charles River Restoration, Phase 3	DM0134
188	Somerville	Somerville Ave. Streetscape Improvements	DM0143
195	Waltham	Downtown Riverwalk	DM0116

E. Appendix H - State List

Reference Number on Map	Municipality	Project	TIP ID No.
87	Boston	Kenmore Square widening	602393
88	Boston	Massachusetts Ave. reconstruction	600636

Index of Projects by 2000-2005 TIP Status, continued

Reference Number on Map	Municipality	Project	TIP ID No.
90	Boston	Northern Ave. connector roads, Phase 2	DM0007
99	Brookline to Westborough	Rte. 9 signage upgrade	602930
102	Cambridge	Massachusetts Ave. reconstruction	602124
104	Everett	Rte. 99 reconstruction	602382
107	Lynn	Rte. 107 intersection improvements at 2 locations	602093
108	Lynn	Rte. 107 traffic signal upgrades at 7 intersections	600990
109	Lynn	Western Ave.-Centre St. intersection improvements	600040
162	Lynn	Rte. 107-Rte. 129 intersection improvements	602081
111	Malden	Rte. 60 reconstruction	601357
116	Somerville	I-93-Rte. 28-Mystic Ave. interchange reconstruction	600831
118	Somerville	Rte. 28 traffic signal upgrades at 4 intersections	601145
193	Somerville	Somerville Ave. reconstruction	602109
196	Waltham	Main St. intersection improvements at 2 locations	DM0097
197	Waltham	Main St.-Linden St.-Ellison Pk. intersection improvements	DM0096

F. Appendix H - Local List

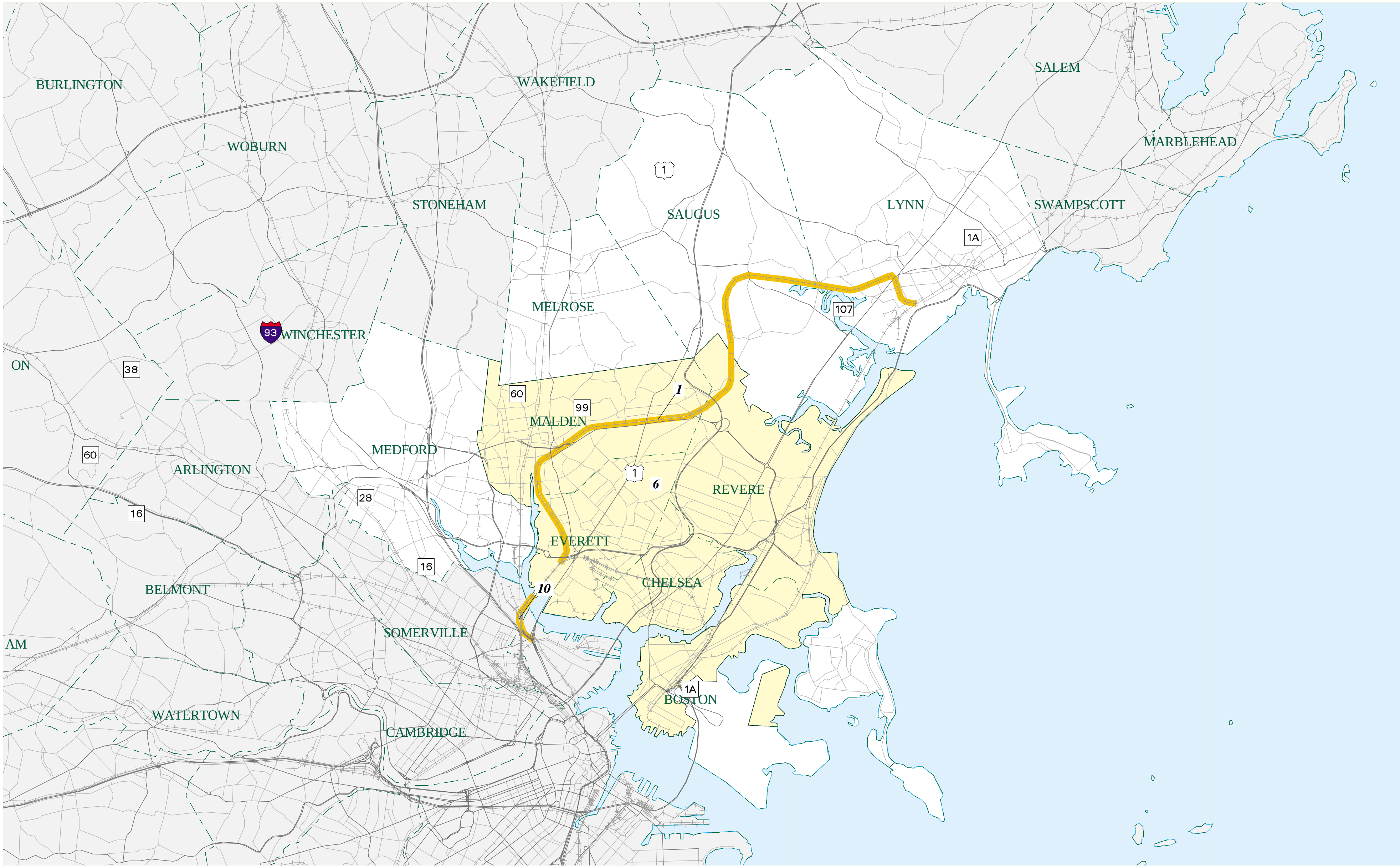
Reference Number on Map	Municipality	Project	TIP ID No.
138	Boston	Boylston St. reconstruction	DM0002
140	Boston	Dorchester Bicycle Facility	005625
141	Boston	Ruggles St. reconstruction	180519
142	Boston	South Huntington Ave. reconstruction	DM0089
143	Boston	South St. reconstruction	129325
144	Boston	Tremont St. reconstruction, Phase 2	601507
145	Boston	Washington St. reconstruction, Phase 4	601605
147	Braintree	Washington St.-South St. traffic signal installation	601187
149	Cambridge	Albany St., Erie St. and Waverly St. reconstruction	602594
150	Cambridge	Concord Ave. reconstruction	060480
151	Cambridge	Fitchburg Rail Line Bicycle Crossing	DM0036
152	Cambridge	Third St. reconstruction	600991
153	Cambridge, Somerville	Alewife Station Bicycle Facility	600811
155	Chelsea	Everett Ave. reconstruction	DM0167
156	Chelsea	Spruce St. reconstruction	DM0168

Index of Projects by 2000-2005 TIP Status, continued

Reference Number on Map	Municipality	Project	TIP ID No.
157	Chelsea	Williams St. reconstruction	DM0169
158	Everett	Ferry St. reconstruction with closed-loop system	DM0170
159	Holbrook	Abington Ave.-Plymouth St. traffic signal upgrade	602260
160	Lynn	Boston St.-Hamilton St. intersection improvements	DM0093
163	Lynn	Rte. 129 reconstruction	602094
164	Lynn	Rte. 129 reconstruction	602077
165	Lynn	Traffic signal upgrades at 4 intersection	601138
166	Lynn	Traffic signal upgrades at 5 intersections	601137
167	Malden	Malden Center MBTA Station-Malden Government Center Pedestrian Bridge	DM0044
168	Malden	Salem St. reconstruction	601983
169	Malden, Medford	Corporation Way reconstruction and extension	602897
172	Medford	Park St.-Salem St. traffic signal installation	602263
173	Melrose	Grove St. reconstruction	DM0049
174	Melrose	Lebanon St. and Main St. reconstruction	601553
175	Melrose	Lebanon St. reconstruction	DM0050
176	Melrose	Main St. reconstruction	DM0051
177	Melrose	Main St.-Essex St. traffic signal upgrade	601551
178	Melrose	Main St.-Green St. intersection improvements	601552
179	Melrose	Swains Pond Ave. reconstruction	DM0153
180	Melrose	Swains Pond Ave. reconstruction	DM0158
181	Melrose	Wyoming Ave. reconstruction	DM0094
182	Newton	Centre St. reconstruction	601703
184	Randolph	Rte. 139 reconstruction	600711
185	Revere	Fenno St., Spring Ave. and Prospect Ave. reconstruction	602104
186	Revere	Park Ave. and Central Ave. reconstruction	601935
190	Somerville	Broadway-Ball Square traffic signal istallation	DM0062
191	Somerville	Central Somerville Bike Path	DM0095
192	Somerville	College Ave. reconstruction	601819
194	Somerville	Temple St. reconstruction	601821
198	Waltham	Mini-Bus Transit Service	DMT031
199	Waltham	Moody St.-Maple St.-High St. intersection improvements	DM0189

Index of Projects by 2000-2005 TIP Status, continued

Reference Number on Map	Municipality	Project	TIP ID No.
200	Waltham	Trapelo Rd.-Forest St. intersection improvements	DM0190
201	Waltham	Trapelo Rd.-Smith St. intersection improvements	DM0191
202	Waltham	Trotten Pond Rd.-Lexington St.-Bacon St. intersection improvements	DM0192
203	Waltham	Wyman St. widening	DM0193
204	Watertown	Intersection Improvements at 3 Locations	602053
205	Watertown	Pleasant St. and Howard St. reconstruction	601686



CTPS Study Locations

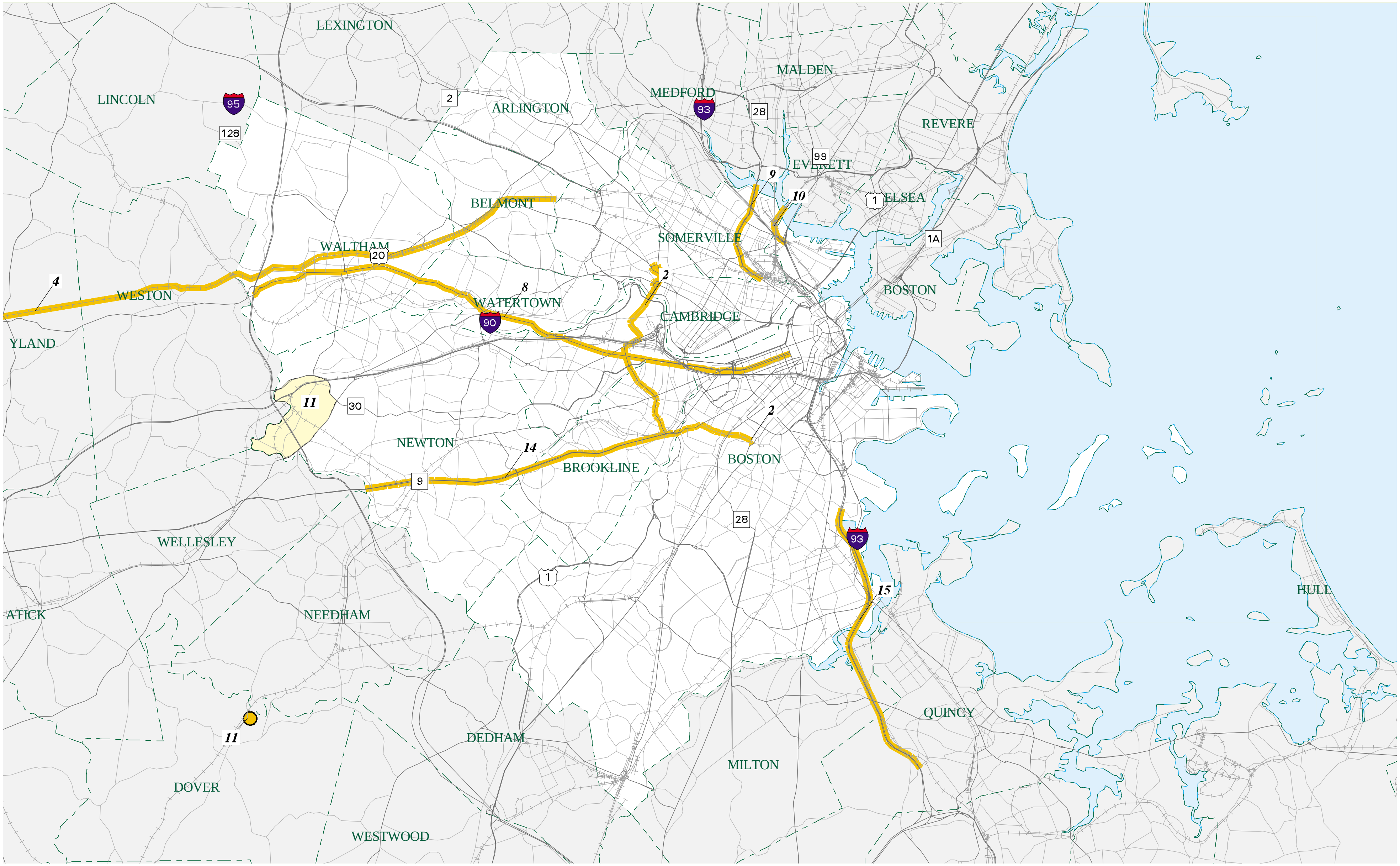
Inner Core: Upper

● Intersection or park- and- ride study

━ Rail, bike or roadway corridor study

🟨 Areas of concentrated study

CTPS Boston-Region Congestion Management System



CTPS Study Locations

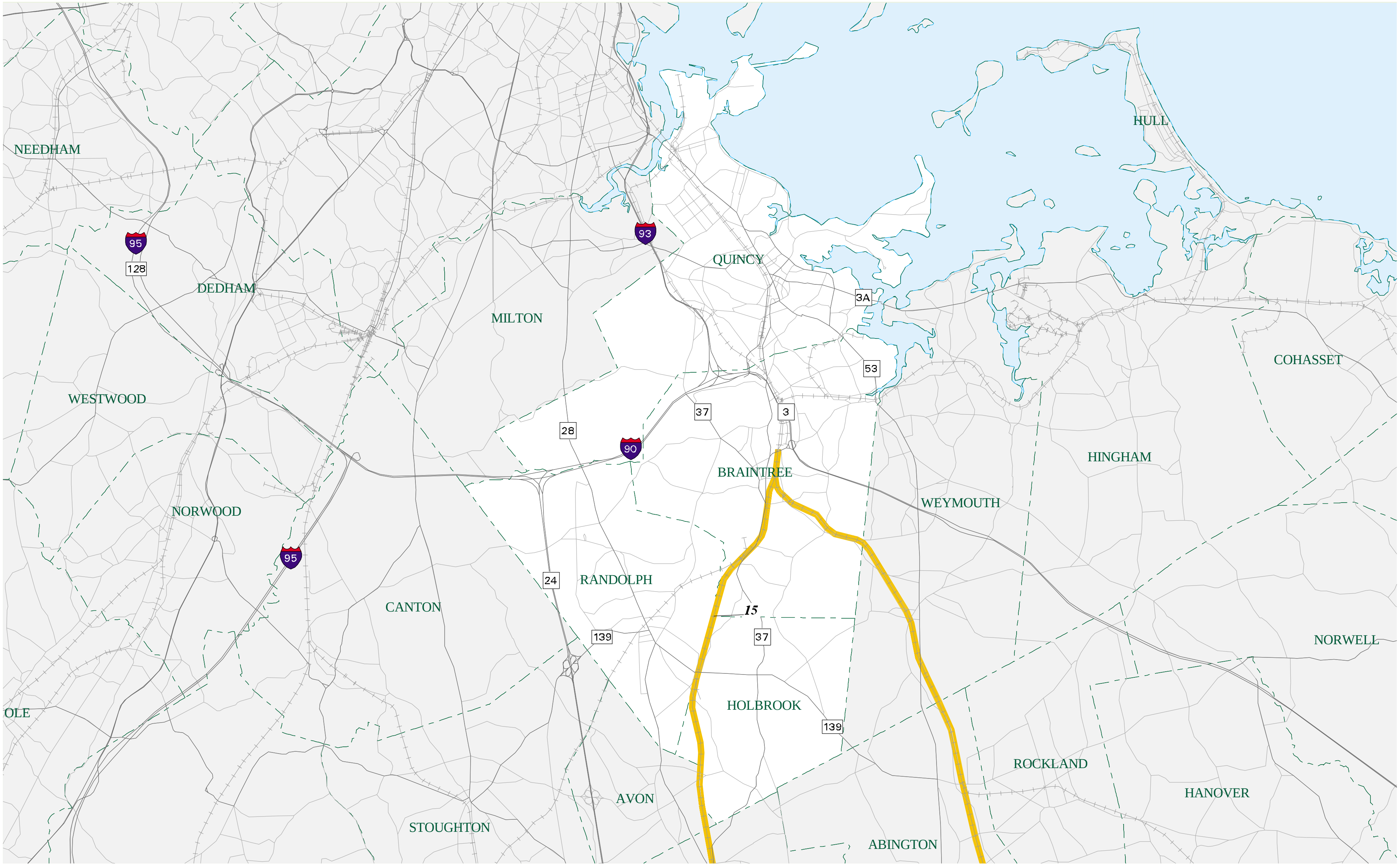
Inner Core: Middle

● Intersection or park- and- ride study

━ Rail, bike or roadway corridor study

▭ Areas of concentrated study

CTPS Boston-Region Congestion Management System



CTPS Study Locations

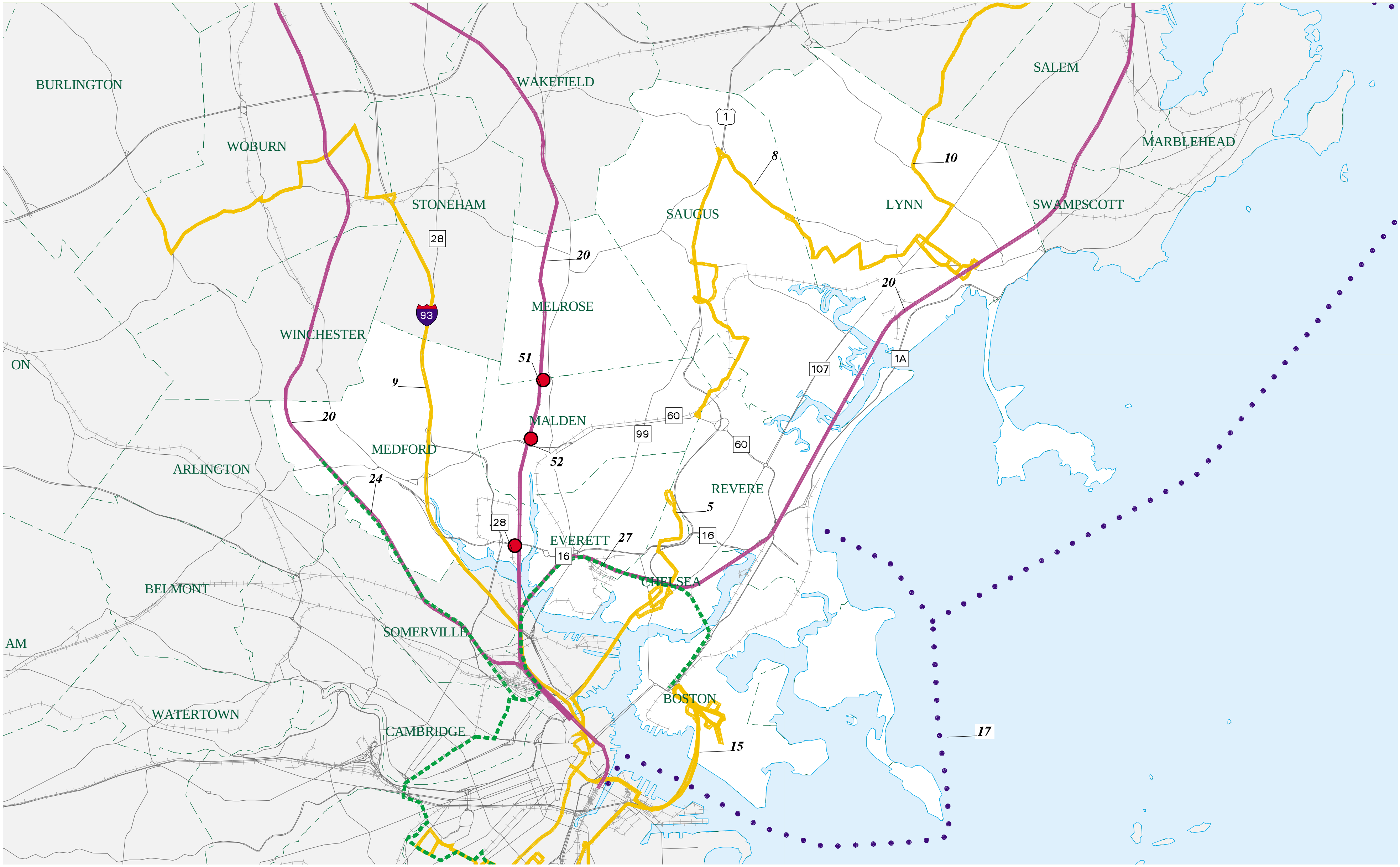
Inner Core: Lower

● Intersection or park- and- ride study
▬ Rail, bike or roadway corridor study
▭ Areas of concentrated study

CTPS Boston-Region Congestion Management System

Index of CTPS Planning Study Locations
Inner Core

Reference Number on Map	CTPS Planning Study
1	Bike-to-the-Sea
2	Bus Route 66/Arterial Signal Retiming Study
Not shown	Central Corridor Bus Service Study
4	Central Mass Rail Trail Feasibility Study
Not shown	Commuter Rail Service to Bourne
Not shown	Land Use—Transportation Discussion Paper
6	Lower North Shore Transportation Improvement Study
11	Newton Lower Falls Area Study
Not shown	North Shore Corridor Bus Study
16	Old Colony Impact Study
Not shown	Ramp Metering Study
14	Route 9 Traffic Study Newton-Brookline
8	Route 20 Corridor Study from Boston CBD to Rt 128
9	Route 28 Traffic Signal Improvement Study
10	Somerville-Boston Bikeway Reconnaissance Study
Not shown	South Corridor Bus Service Study
15	Southeast Expressway HOV Lane Before/After Study
Not shown	Suburban Public Transportation Study
Not shown	Truck Exclusion Mapping Project



Other Ongoing Activities by Type

Inner Core: Upper

▬ Bus

▬ Rail

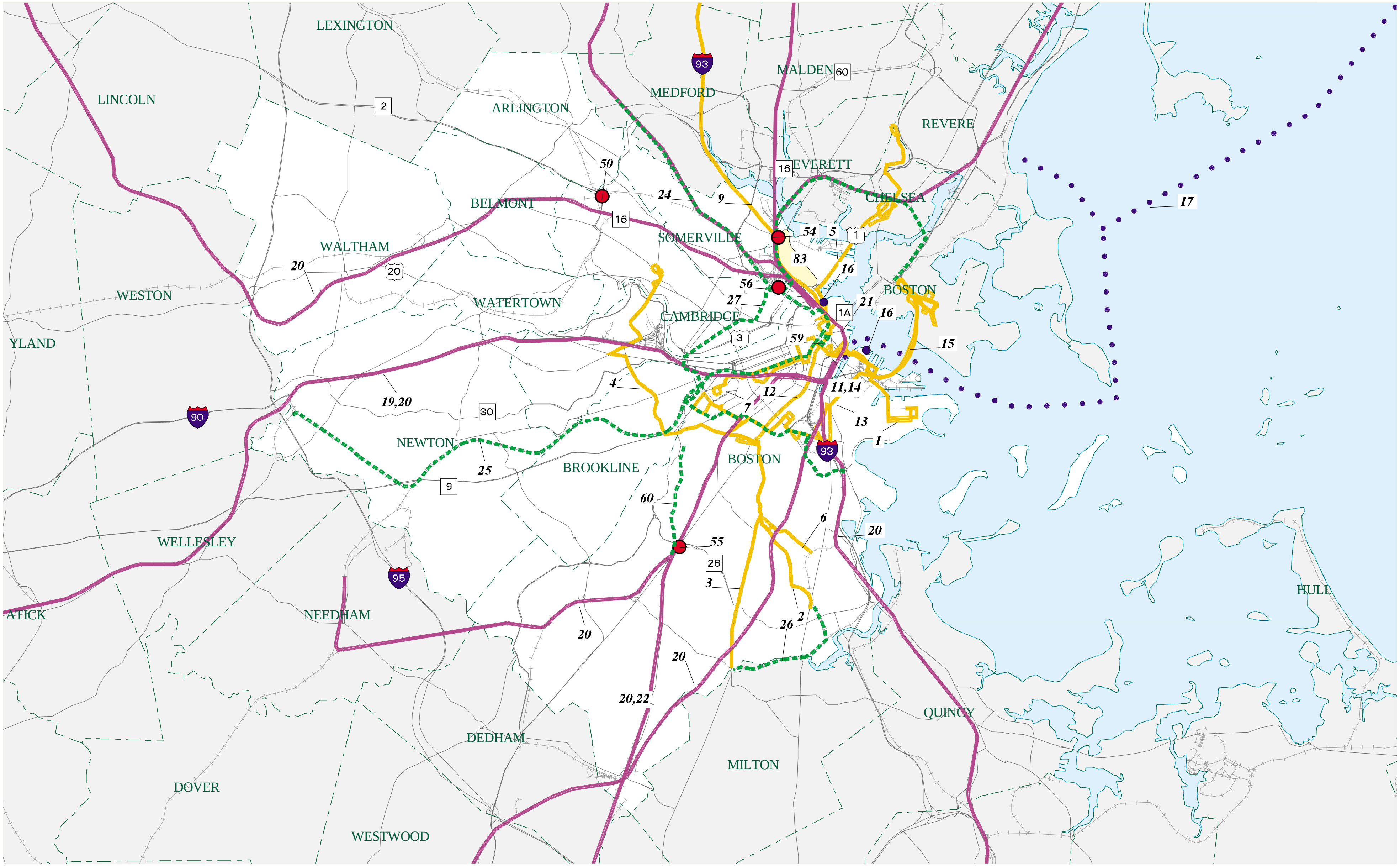
▭ Roadway

● Park- and- Ride

• • Commuter Boat

- - - Other Transit

CTPS Boston-Region Congestion Management System

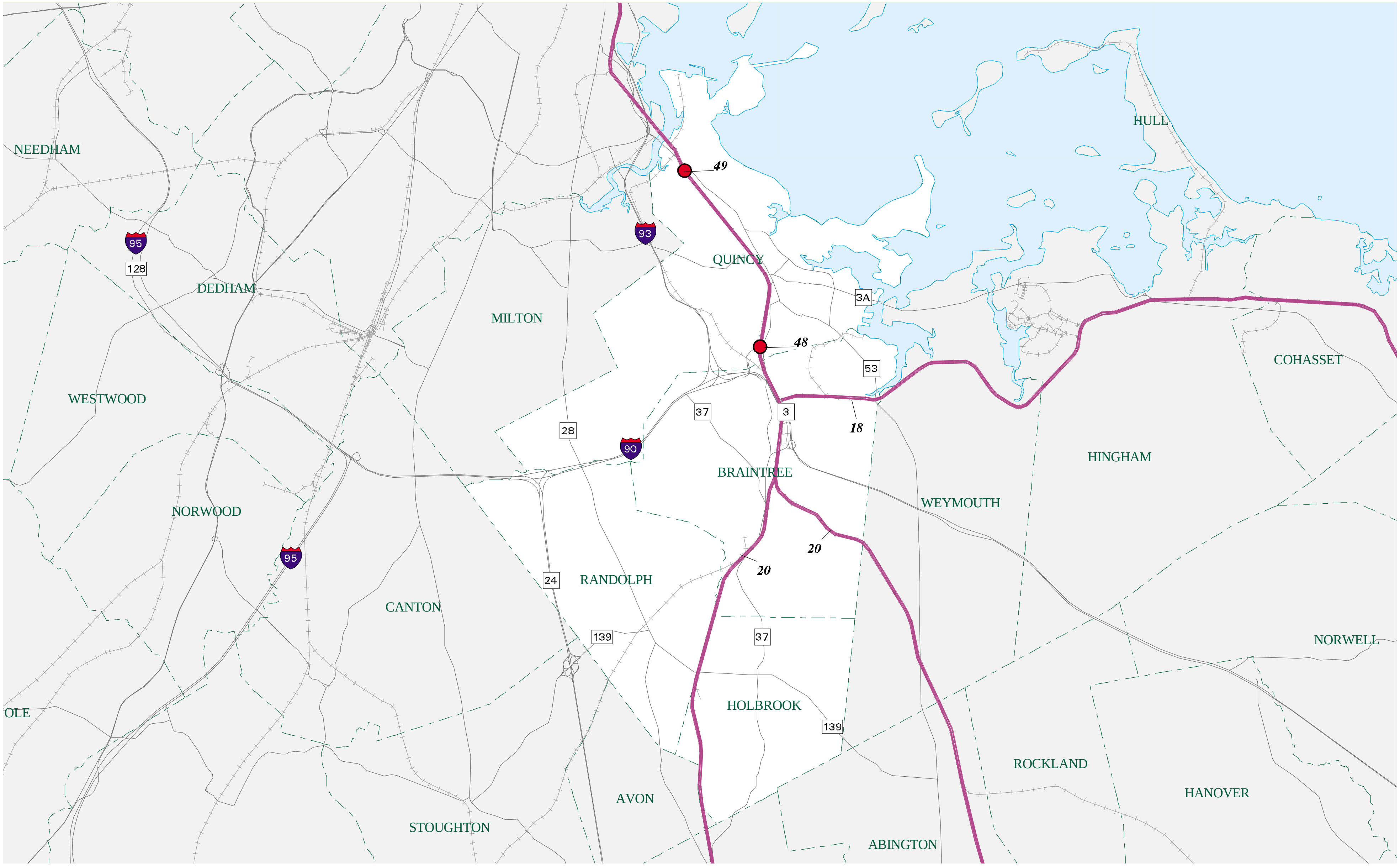


Other Ongoing Activities by Type

Inner Core: Middle

— Bus
— Rail
▭ Roadway
● Park- and- Ride
• • Commuter Boat
- - - Other Transit

CTPS Boston-Region Congestion Management System



Other Ongoing Activities by Type

Inner Core: Lower

Rail
Commuter Boat
● Roadways
● Park- and- Ride
Bus
Roadway Study Area

Boston-Region Congestion Management System

Index of Other Ongoing Activities by Type
Inner Core

Reference Number on Map	Mode	Type of Activity
1	Bus	Headways decreased on route #7.
2	Bus	Headways decreased on route #23.
3	Bus	Headways decreased on route #28.
4	Bus	AM headways decreased on route #66.
5	Bus	Midday headways decreased on route #111.
6	Bus	Schedules adjusted to reflect running time on route #19.
7	Bus	Route #55 adjusted to less congested path. Outbound route now operates via Huntington Avenue instead of Newbury Street.
8	Bus	Major route change for route #429. This route extended from North Saugus to Linden Square in Malden via Square One Mall. Off-peak frequencies improved, hours of operation expanded.
9	Bus	Route #354 downtown terminal changed to Government Center. Scheduled adjusted to reflect running time; number of trips increased.
10	Bus	Evening service added to route #435.
11	Bus	South Boston Piers Transitway, Phase I
12	Bus	Washington Street Replacement Service (Silver Line)
13	Bus	Inner Circumferential Bus Service. For CT3 only, weekday service expanded from 6AM-8PM to 4AM-9:30 PM, Saturday and Sunday service added.
14	Bus	South Boston Piers Transitway, Phase II
15	Bus	Airport Intermodal Transit Connector (AITC)
16	Commuter boat	Commuter boat service between New Federal Court House in South Boston and Love Joy by North Station
17	Commuter boat	Commuter boat service between South Station and Revere or Salem
18	Rail	Old Colony Commuter Rail Restoration, Greenbush Branch
19	Rail	Worcester Commuter Rail Extension
20	Rail	Commuter Rail Express Service
21	Rail	North Station - South Station Rail Link
22	Rail	New Bedford/Fall River Commuter Rail Extension via Easton
23	Rail	Commuter Rail Extension to Millis
24	Other Transit	Green Line Extension to Medford Hillside (near Tufts)

Index of Other Ongoing Activities by Type, continued

Reference Number on Map	Mode	Type of Activity
25	Other Transit	Green Line D Branch study to improve operations and expand Green Line capacity
26	Other Transit	Mattapan Replacement Service, refurbish existing PPC cars.
27	Other Transit	Inner Circumferential Transit Line (The Urban Ring)
48	Park-and-Ride	Quincy Adams parking lot expansion - 170 spaces
49	Park-and-Ride	North Quincy parking lot expansion - 1,300 spaces
50	Park-and-Ride	Alewife parking lot expansion - approximately 200 spaces
51	Park-and-Ride	Oak Grove parking lot expansion - 25 spaces
52	Park-and-Ride	Malden Center parking lot expansion - 23 spaces
53	Park-and-Ride	Wellington parking lot expansion - approximately 1000 spaces
54	Park-and-Ride	Sullivan Square parking lot expansion - 5 spaces
55	Park-and-Ride	Forest Hills parking lot expansion - 214 spaces
56	Park-and-Ride	Lechmere parking lot expansion - 170 spaces
59	Transit	Red Line-Blue Line pedestrian connector
60	Transit	Green Line Arborway Restoration/Replacement
83	Highway	Rutherford Avenue Improvements

IV. PROPOSED CMS PLANNING STUDIES FOR THE SUBREGION

This chapter recommends CMS planning studies for the subregion. The development of these recommendations was based both on the profile of the subregion's existing mobility concerns and—in order to avoid duplication of effort—on an inventory of the improvement projects and planning efforts already underway that address any of the mobility concerns. No attempt was made to prioritize the recommendations. This will be done in consultation with the Inner Core committee.

A. Roadways

This discussion of roadways is organized geographically. It first recommends studies for the three sections of the Inner Core, upper, middle, and lower (the boundaries of these areas are shown in the map series in chapters II and III). It then recommends a study that would examine locations yet to be determined.

1. Inner Core: Upper

Many of the roadway concerns in the upper section of the Inner Core have been identified by the Lower North Shore Transportation Improvement Study and are addressed by that study's recommendations. In cooperation with a task force composed of municipal officials, state legislators, and state agency representatives, and with input from an extensive public participation process, CTPS proposed a series of long- and short-term improvements for numerous intersections, for interchanges, and for highway facilities including Routes 1A, 16, 60, and 1. Recommendations for pedestrian improvements and traffic calming are also included. Responsibility for implementation belongs to the cities and towns, the Metropolitan District Commission, and MassHighway. The draft report on this study will be available for review in the fall of 2000.

To address concerns not covered by the Lower North Shore Transportation Improvement Study or by other studies or projects, the following two studies are proposed:

Traffic and Pedestrian Circulation Study, Route 60, Malden
Although Route 60 in the city of Malden was included in the Lower North Shore study for concern identification, recommendations were not identified at that time. Improvements should be developed as a follow up to the previous study. Congestion was identified along Route 60 between Fellsway (Route 28) and Broadway Street (Route 99). CTPS, in cooperation with city officials, could recommend improvement alternatives, including improvements to pedestrian circulation.

Roadway Reconnaissance Study, Route 1A, Lynn
Congestion was identified along Route 1A in Lynn from Kingman Street to the Swampscott town line. CTPS could perform a roadway reconnaissance study in which the nature of the congestion would be identified and, in cooperation with Lynn city officials, measures to address the congestion would developed.

2. Inner Core: Middle

a) Freeways

Of the freeways in this segment of the subregion, I-93 stood out as very congested during the morning and evening peak periods. As shown in the relevant maps and tables in chapter III, there are numerous studies and construction projects underway to improve conditions along these roads. No new CMS planning study is recommended at this time, but monitoring by CTPS should continue.

b) Arterials

In this section of the Inner Core, the following arterial roads stood out as being most congested:

- Massachusetts Avenue in Boston and Cambridge
- Route 28 south from downtown Boston to the Boston/Milton town line
- Route 16 between Medford and Wellesley

Other arterial roads with isolated congested segments included:

- Beacon Street in Newton, Brookline, and Boston
- Route 30 (Commonwealth Avenue) in Boston
- VFW Parkway at the Dedham/Boston line
- Route 9 in Boston, Brookline, and Newton
- Route 2/Storrow Drive in Boston and Cambridge
- Route 28/38 in Cambridge and Somerville

Many of the congested segments on the above arterials, including those on VFW Parkway, Route 9 in Brookline and Newton, and Route 28/38, have been studied and have improvements under design or construction, or are being examined in ongoing planning studies (for details, refer to the maps and tables in chapter III). For congestion concerns that are not being addressed, the following studies are recommended:

Corridor Planning Study, Route 28, Boston
This corridor study should extend between downtown Boston and the Milton town line. The study should include pedestrian circulation, parking, and intersection analysis, and a signal retiming/progression component for the efficient movement of buses along the corridor.

Traffic Operations Studies of Various Isolated Roadway Segments/Intersections
This type of study is intended to assist cities and towns with congestion concerns at specific isolated locations. These may be roadway segments, intersections, or a combination of the two. The exact nature of each study would be defined in cooperation with community planners and engineers. Improvement recommendations could include safety, pedestrian, parking, and signal retiming/ progression components, as appropriate. It is proposed that the roadway segments to be studied include (but not necessarily be limited to):

- Route 16 in Newton and Watertown
- Massachusetts Avenue in Arlington
- Route 30 in Newton
- Beacon Street in Newton

3. Inner Core: Lower

a) Freeways

The congestion concerns along Route I-93 south in Quincy and Route 3 in Braintree are well documented in CMS reports previous to the present one and in other studies. The findings of the present report support the need for the ongoing planning studies and activities that are expected to reduce delays along these facilities, either directly (Route 3 widening) or indirectly (MBTA Greenbush commuter rail). No other freeway planning study is recommended at this time.

b) Arterials

Route 3A Reconnaissance Study, Quincy, Weymouth, and Hingham
Route 3A in Quincy was identified as congested. It is recommended that a reconnaissance study be initiated to identify the exact nature of the congestion, and that, in consultation with the city and the Inner Core committee, appropriate measures to address the congestion be developed. Portions of Route 3A in Weymouth and Hingham might be included in the study.

B. Transit Services

1. Crowding

For its fiscal year 2000 Service Plan, the MBTA will propose the adoption of a 30-minute-peak-period crowding standard for buses as recommended in the 1997 CMS report, replacing the full-peak-period standard. The 30-minute period standard was applied to the ridecheck data collected by CTPS in 1998 and 1999. Of the 170 MBTA routes, most of which have at least one end in the Inner Core subregion, 15 failed to meet the peak period crowding standard. This data has been forwarded to the MBTA for inclusion in the FY 2000 Service Plan and in their normally scheduled service changes that are effected four times a year.

The Blue, Green, and Orange lines, and commuter rail both north and south of the city of Boston, also exceed the crowding standards during certain times. As of this writing, the 1994 Program for Mass Transportation is still in effect. Studies from that and other sources such as the lengthening of the Blue Line platforms, Urban Ring, Green Line extension, South Boston Piers Transitway, and North Shore Major Investment Study, will, in addition to providing other benefits, result in significant decreases in crowding (see Other Ongoing Activities by Type maps and related tables in chapter III).

No new CMS planning study is proposed at this time on the subject of transit crowding.

2. Late Arrivals

Twelve bus routes failed to meet the on-time performance standard. More than half of these routes are Lynn Garage routes. Late bus arrivals are most closely related to roadway congestion caused by high traffic volumes, double-parking, parking in bus stops, inappropriate traffic signal phasing and timing, or the need for signal coordination. These are multijurisdictional concerns that require a cooperative approach involving a number of agencies and local authorities.

As with crowding, the MBTA will address bus-late-arrival issues in the FY 2000 Service Plan. Among the strategies used by the MBTA to improve on-time performance are increases in the allowed time or running time and route changes in which buses terminate at rapid transit stations instead of continuing downtown. Rerouting selected North Shore express buses through the Ted Williams Tunnel which is less congested that the old tunnels should, in addition to providing access to the South Station area from the North Shore, decrease late arrivals.

Of the rail-based services, all except the “B” Green Line failed to meet the on-time performance standards. The improvements resulting from such MBTA studies as the Urban Ring may produce better on-time performance.

The following transit planning studies are recommended at this time to address some of the cited overcrowding and late-arrival issues and to provide other benefits as well. The responsibility of the studies would be with the MBTA and, depending of the study, CTPS or the MBTA’s consultant.

Conversion of the Fairmount Commuter Rail Line
The purpose of this study would be to review the potential for converting the Fairmount commuter rail line to a higher frequency service, possibly with closer stop spacing, in order to improve transit access from Hyde Park and Dorchester to downtown Boston. Service on this exclusive transit right-of-way would operate between Readville and South Station and maintain the existing intermediate stops at Fairmount, Morton Street, and Uphams Corner. The possibility of additional stops near Washington Street and the South Bay Shopping Center would also be examined. The commuter rail service currently carries relatively light passenger loads in spite of the very high density and transit dependency of the neighborhoods it serves. The study would review options for vehicle types, examine possible connections with other transit lines and assess potential passenger demand.

Dedicated Transit Right-of-Way between Mattapan Square and Dudley Station
This study would review the potential for a dedicated transit right-of-way for a high-frequency transit service between Mattapan Square and Dudley Station via Blue Hill Avenue and Warren Street. This area is currently served by bus routes 14, 19, 22, 23, 28, and 31. Most of these routes operate at high frequency with heavy passenger loads and are subject to roadway delays. A review of the space available for such a right-of-way would be conducted along the entire length of the corridor. In addition, the study would consider the potential for linking the Blue Hill Avenue service with the Silver Line to downtown Boston, the South Boston waterfront, and Logan Airport. This study would be conducted in coordination with the Route 28 Corridor Planning Study that was recommended earlier.

Automated Vehicle Location (AVL)/Computer-Assisted Dispatch (CAD) System
This study would determine the potential for developing an automated vehicle location (AVL)/computer assisted dispatch (CAD) system for the MBTA bus system. The purpose of the study would be to improve the oversight of MBTA bus service in order to improve schedule adherence. The system could also provide substantial data on the changes in traffic delays over time.

C. Park-and-Ride Lots

1. Full Lots

The majority of the lots in the Inner Core are more than 85% full, an indication that there exists demand for additional commuter parking spaces in the subregion.

Since 1997, as part of the Executive Office of Transportation and Construction’s commitment to provide 20,000 new park-and-ride spaces by the end of the year 2000 or shortly thereafter, 589 spaces have been constructed at Logan Airport and 99 private spaces leased at Alewife Station. Beyond 2000, the MBTA, as part of its continuing development of commuter parking expansion projects and intercept parking facilities, has plans for additional parking spaces in the Inner Core. One such project is a 1,300-space lot in North Quincy (for more locations, see the Other Ongoing Activities by Type maps and related tables in chapter III).

Study of Full MBTA Park-and-Ride Lots
CTPS should analyze existing commuter-rail passenger origin information and assist the MBTA with identifying intercept park-and-ride lot locations that will serve commuters better.

2. Underutilized Lots

Some lots in the Inner Core remain underutilized. One of these is the Arlington lot at MassHighway's District 4 offices, where express bus service is unavailable. The rest of the underutilized lots belong to the MBTA, and they may be underutilized for a number of reasons, including that most commuters in the vicinity of the lot walk to the station, the lot may be perceived as unsafe, or it may lack direct access from main roads.

No study recommendation is made at this time for underutilized lots.

V. PROPOSED CMS PLANNING STUDIES FOR THE BOSTON MPO REGION

This chapter groups the proposed planning studies for all eight subregions of the Boston MPO subregion, in order to provide a comprehensive picture. For the context in which the studies for a subregion have been proposed, please refer to the volume of this CMS report that is dedicated to that volume.

A. Inner Core

Traffic and Pedestrian Circulation Study, Route 60, Malden
Although Route 60 in the city of Malden was included in the Lower North Shore study for concern identification, recommendations were not identified at that time. Improvements should be developed as a follow up to the previous study. Congestion was identified along Route 60 between Fellsway (Route 28) and Broadway Street (Route 99). CTPS, in cooperation with city officials, could recommend improvement alternatives, including improvements to pedestrian circulation.

Roadway Reconnaissance Study, Route 1A, Lynn
Congestion was identified along Route 1A in Lynn from Kingman Street to the Swampscott town line. CTPS could perform a roadway reconnaissance study in which the nature of the congestion would be identified and, in cooperation with Lynn city officials, measures to address the congestion would be developed.

Corridor Planning Study, Route 28, Boston
This corridor study should extend between downtown Boston and the Milton town line. The study should include pedestrian circulation, parking, and intersection analysis, and a signal retiming/progression component for the efficient movement of buses along the corridor.

Traffic Operations Studies of Various Isolated Roadway Segments/Intersections
This type of study is intended to assist cities and towns with congestion concerns at specific isolated locations. These may be roadway segments, intersections, or a combination of the two. The exact nature of each study would be defined in cooperation with community planners and engineers. Improvement recommendations could include safety, pedestrian, parking, and signal retiming/ progression components, as appropriate. It is proposed that the roadway segments to be studied include (but not necessarily be limited to):

- Route 16 in Newton and Watertown
- Massachusetts Avenue in Arlington
- Route 30 in Newton
- Beacon Street in Newton

Route 3A Reconnaissance Study, Quincy, Weymouth, and Hingham
Route 3A in Quincy was identified as congested. It is recommended that a reconnaissance study be initiated to identify the exact nature of the congestion, and that, in consultation with the city and the Inner Core committee, appropriate measures to address the congestion be developed. Portions of Route 3A in Weymouth and Hingham might be included in the study.

Conversion of the Fairmount Commuter Rail Line
The purpose of this study would be to review the potential for converting the Fairmount commuter rail line to a higher frequency service, possibly with closer stop spacing, in order to improve transit access from Hyde Park and Dorchester to downtown Boston. Service on this exclusive transit right-of-way would operate between Readville and South Station and maintain the existing intermediate stops at Fairmount, Morton Street, and Uphams Corner. The possibility of additional stops near Washington Street and the South Bay

Shopping Center would also be examined. The commuter rail service currently carries relatively light passenger loads in spite of the very high density and transit dependency of the neighborhoods it serves. The study would review options for vehicle types, examine possible connections with other transit lines and assess potential passenger demand.

Dedicated Transit Right-of-Way between Mattapan Square and Dudley Station
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Automated Vehicle Location (AVL)/Computer-Assisted Dispatch (CAD) System
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Study of Full MBTA Park-and-Ride Lots
CTPS should analyze existing commuter-rail passenger origin information and assist the MBTA with identifying intercept park-and-ride lot locations that will serve commuters better.

B. Minuteman Advisory Group on Interlocal Coordination (MAGIC)

CTPS is not prepared to recommend the initiation of any new CMS planning studies, pending the results of the MAGIC Subregional Area Study, Phase I, and of the Congested Signalized Intersections Study.

C. MetroWest Growth Management Committee (MetroWest)

No new planning studies have been recommended for MetroWest. However, there are several possible study subjects that were mentioned by town planners and others during Phase I of the MetroWest Subregional Area Study and not investigated in Phase II that could receive attention from CTPS in the near future. Local officials are encouraged to send requests for such studies to the CTPS director and/or the MPO executive secretary.

D. North Shore Task Force (NSTF)

Corridor Planning Study, Route 1A, Salem and Beverly
Before initiating this study, it is recommended that further investigation be made into the numerous mobility concerns and active projects and studies along this corridor to determine if there are any improvement "gaps" that still need to be addressed. If gaps are found, then a corridor planning study may be warranted. Improvement recommendations from the corridor study could involve intersections, pedestrians, safety, and roadway-access-management issues. The work would be done in close cooperation with the NSTF and with the communities' engineers and planners.

Traffic Operations Studies of Various Isolated Roadway Segments/Intersections
This type of study is intended to assist NSTF member municipalities with congestion concerns at specific isolated locations. These may be roadway segments, intersections or a combination of the two. The exact nature of each study would be defined in cooperation with the communities' planners

and engineers. Improvement recommendations could include safety, pedestrian, parking and signal retiming/progression components, as appropriate. Roadway segments to be studied may include:

- Route 114 in Middleton from Danvers town line to Log Bridge Road
- Route 62 from Liberty Street to Route 114, Middleton

Congested Signalized Intersections Study

In this study, NSTF members would compile a list of signalized intersections to be examined for minor congestion and safety improvements. A series of such studies are being performed which together are to cover the entire Boston MPO region; one or more subregions are being addressed each year. The studies for three subregions have already been completed; those for three others are underway.

Study of Full MBTA Park-and-Ride Lots

At the request of the MPO, CTPS could analyze existing commuter-rail passenger origin information and assist the MBTA in identifying additional intercept park-and-ride lot locations that will serve commuters better.

E. North Suburban Planning Council (NSPC)

Feasibility Study for Shuttle Bus Service in the Subregion

Presently, the public transportation services in this subregion of the MPO are the Lowell and Haverhill commuter rail lines and several MBTA bus lines that terminate at the Red and Orange lines and at Boston's Government Center. The NSPC would like CTPS to explore opportunities for shuttle service; for example, between commuter rail stations and areas of concentrated development. The NSPC subregion contains a number of such areas where shuttle services might be of interest to employers. The first step in determining the appropriateness of such service would be for CTPS to identify and analyze the origin patterns of employees in concentrated areas for which survey data or another source of information on employee origins would be available. Such data would need to be provided to CTPS by interested businesses or by the North Suburban Transportation Management Area.

F. South Shore Coalition (SSC)

Route 53 Master Plan

Route 53 traverses the subregion from, roughly, northwest to southeast. It varies in physical and congestion characteristics over its length. Several projects, some already programmed and others not currently programmed in the TIP, are in various pre-implementation stages of planning and design. The Route 53 Master Plan study would identify the status of each of these projects, determine the interaction (or lack thereof) between them, and recommend a plan that would define priorities and provide continuity between projects.

SSC Subregional Area Study

The proposed study would cover all 11 cities and towns. The purpose of the study would be twofold: (1) to identify high-priority problems and potential studies, based on existing data and interviews with town planners and engineers (Phase I), and (2) to carry out those studies to the point where specific recommendations can be made (Phase II). The intent is to address issues, needs, and improvement recommendations across modes and markets. This proposed study would be carried out in consultation with the subregion's communities.

G. Southwest Advisory Planning Committee (SWAP)

The Route 109 Corridor Planning Study, originally recommended to stop at the SWAP/TRIC boundary, has been expanded to include Millis and Medway at the request of committee members from both subregions. For a description of this study, see 'Three Rivers Interlocal Council (TRIC),' below.

H. Three Rivers Interlocal Council (TRIC)

Route 109 Corridor Planning Study
This study would be the third corridor planning study initiated in the TRIC subregion that addresses congestion and safety along a radial highway. The other two studies looked at Route 1 in Dedham and Norwood, and Route 138 in Milton, Canton, and Stoughton. The work scope for the proposed Route 109 study would be similar to the scopes of the other two; the main goals would be reducing peak period congestion, improving safety, and providing better bicycle and pedestrian accommodations. Alternatives to the private automobile would also be examined.

The proposed study area extends through seven communities, from I-95 to I-495. The study area towns of Dedham, Westwood, Dover, Walpole, and Medfield are located in TRIC, whereas Millis and Medway are located in SWAP. The safety improvements already programmed in the current TIP for Route 109 in Westwood would be included in the base case scenario. As with the other two planning studies, it is expected that CTPS would actively coordinate all aspects of the study with a committee formed especially for this project. The committee could consist of officials from the seven communities, Norfolk County, MAPC, MassHighway—Planning, and MassHighway Districts 3 and 4, state legislators, and representatives of neighborhood, business, and environmental groups.

VI. COMMENTS AND RESPONSES

This chapter presents comments received as part of the public outreach effort for the 2000 CMS Report and a response to each. They are organized by subregion, with the verbal comments pertaining to the subregion appearing first, followed by the written comments. Verbal comments and responses may not reproduce exactly the wording used at the meeting, as the meeting minutes were not tape-recorded. Comments made by members of the Joint Regional Transportation Committee (JRTC), which generally apply to the entire Boston MPO region, follow those from the subregions. The correspondence from which the written comments were taken is provided at the end of the chapter; the location of each comment has been flagged by placing the designation of the comment (for example "A.2") in the margin of the correspondence.

A. Inner Core

Comments from the Public Meeting for the Inner Core Subregion
April 5, 2000

A.1 *The 30-minute peak period used to measure passenger crowding on buses is too small a duration. For many routes, this means only one bus.*

Response: The time duration for measuring passenger crowding on buses was reduced from 120 minutes to 30 minutes to intentionally detect crowding on individual trips. With the longer duration, crowded buses that ran less frequently were being missed. With the reduction, improvement decisions can be based on a clearer understanding of the deficiencies.

Written Comments from the City of Somerville, Office of House & Community Development
June 6, 2000

A.2 *The I-93/Route 28/Mystic Avenue interchange should be included in the list of Roadway Mobility Concerns (paraphrase of comment).*

Response: This location, labeled Roadway Mobility Concern #179, has been added to both the map and the table.

A.3 *A solution to the congestion and safety problems at the I-93/Route 28/Mystic Avenue interchange is a key part of the redevelopment of Assembly Square. The City of Somerville requests a CMS planning study at this location, to be carried out in the near future (paraphrase of comment).*

Response: In the early 1990s, CTPS participated in a feasibility study of design alternatives for improving the I-93 interchange at Route 28 and Mystic Avenue. A preferred alternative resulted from that effort. MassHighway is now awaiting $7,000,000 in funding to perform the necessary design work for this location. It is our belief that the planning work for this interchange has been completed.

B. Minuteman Advisory Group on Interlocal Coordination (MAGIC)

Comments from the Public Meeting for the MAGIC Subregion
April 13, 2000

B.1 *The Sub-Signatory Committee (SSC) of the Boston MPO voted to adopt the alternative method for monitoring arterial system performance, traffic queue length.* [This new performance measure, tested in a pilot study conducted for the SWAP subregion, would replace the two performance measures—average speed and delay—currently used.]

Response: The report in which the test results for the traffic queue length performance measure was approved by the SSC in July 1999; however, traffic queue length was not specifically adopted by the SSC as the new performance measure for CMS monitoring.

B.2 *On the Roadway Mobility Concerns map, it would be worthwhile to make a distinction between the different classes of arterials.*

Response: The distinction between different arterial classes will be made on the Roadway Mobility Concerns map in the next CMS report.

B.3 *Passenger crowding for the MBTA's rail and other transit services is averaged over too long a span (e.g., averaging over the entire Riverside Line yields a very different result than averaging over the segment between Copley and Government Center).*

Response: Passenger crowding is not averaged over an entire line, but is instead measured at the peak load point. Therefore, if the most heavily used segment of a line is overcrowded, then the entire line is marked as a mobility concern in the CMS report.

B.4 *More MassHighway carpool/vanpool park-and-drive lots are needed, strategically located to intercept traffic from the north and west.*

Response: Over the past several years, MassHighway has initiated a series of studies that have evaluated the success of existing park-and-drive lots, to aid in locating new lots where they are most likely to be used. The second study in the series, Estimating Demand for MassHighway Park-and-Ride Lots, recently completed by CTPS, recommended five potential sites for lots along I-495. They are at Exits 19 (Route 109, Milford), 20 (Route 85, Hopkinton), 21 (West Main Street, Hopkinton), 22 (I-90, Hopkinton), and 27 (Route 117, Bolton). The third study, currently underway, will further explore siting lots in the underserved markets, as well as test scenarios for linked bus/park-and-ride lot systems.

B.5 *In chapter IV of the draft CMS report, when discussing congestion on Route 128 and Route 3 north, it would be beneficial to mention that congestion on local streets is caused by traffic overflow from these major roads. This issue is significant because of similar concerns associated with the pending Route 3 construction.*

Response: An acknowledgement will be made to the appropriate section of the report.

B.6 *Route 4 at Treble Cove Road in Billerica is an intersection worth studying under the Congested Signalized Intersections Study; it will be greatly impacted by Route 3 construction. This intersection is located outside the Boston MPO region.*

Response: Your concerns about this intersection have been forwarded to the Northern Middlesex Regional Planning Agency, which provides transportation planning services for the town of Billerica.

C. MetroWest Growth Management Committee (MetroWest)

Comments from the Public Meeting for the MetroWest Subregion
May 17, 2000

C.1 *There are many congested intersections, especially in Ashland, missing from the map showing Roadway Mobility Problems.*

Response: Not all roadways have been monitored in the CMS. Please let us know which congested locations are missing and we will add them to the map.

C.2 *Noticeable growth is occurring in the western half of the MetroWest subregion. Traffic will increase on north-south roadways as people travel to the new MBTA stations in Ashland and Southborough. These problems are not shown on the Roadway Mobility Problems map. Furthermore, the Roadway Mobility Problems map shows problems uncovered from planning studies on east-west roadways only. North-south routes also need to be studied.*

Response: Many north-south routes were monitored by CTPS in 1998 at the request of MetroWest. These routes are listed in the table spanning pages II-2 to II-3 of this CMS report. The monitoring uncovered few existing problems (as defined by CMS performance measures). Two north-south routes are being studied in the MetroWest Subregional Area Study. Currently in Phase II, this study started under a general scope of work that was guided and fine-tuned by the MetroWest Growth Management Transportation Task Force and other town planners and engineers within the subregion. Five items were considered high priority in Phase I and advanced for further study in Phase II. Two of these studies—Route 126 signal coordination (in Framingham) and Route 9/Route 27 interchange redesign—address congestion levels on north-south routes.

C.3 *The proposed MBTA commuter rail stations in Ashland and Southborough are going to significantly increase congestion on the north-south routes. Ashand's station will be located downtown, an area that is already heavily congested during peak periods. The MBTA does not intend to mitigate existing problems. We are concerned about future congestion levels and the ill effects the commuter rail stations will have on both local and regional traffic flows.*

Response: In general, the MBTA mitigates traffic impacts from the trips attracted to the new stations. Also, feeder roadways to the proposed commuter rail stations (e.g., Route 135, Route 85) will continue to be monitored as part of the CMS. If these roadways become congested or if existing congestion levels worsen, CMS planning studies could be initiated to address these issues.

C.4 *Have you ever thought of contacting the town engineers and planners to get their take on the problems, rather than just developing the CMS report independent of local input?*

Response: We thought that town planners and engineers generally attended the MAPC subregional meetings. For those not attending, we expected committee members to communicate the progress and results of the CMS to their town's technical staff for their input. Nevertheless, the CMS monitoring program is continually evolving, and there is, indeed, a proposal being considered that includes directly surveying town and city engineers and planners on their problems and priorities, prior to publishing the draft CMS report. The practice of soliciting input from local engineers and planners has been incorporated into CMS planning studies. In fact, Phase I of the MetroWest Subregional Area Study included extensive interviews with engineers and planners from MetroWest communities.

C.5 *The I-495 Technology Corridor Initiative/Campaign for Shared Solutions (I-495 Initiative, for short) should be mentioned in the CMS report.*

Response: The I-495 Initiative is a collaborative planning effort undertaken by state and local officials, business leaders, environmental advocates, and community leaders. The essential purpose is to ensure adequate water, sewer, and transportation services before potential economic expansion along the I-495 corridor happens, while protecting the region's character and quality of life. Mention of this effort has been added to the relevant CMS report volumes.

D. North Shore Task Force (NSTF)

Comments from the Public Meeting for the NSTF Subregion
April 13, 2000

D.1 *Route 128 interchanges north of Salem are congested and unsafe.*

Response: MassHighway District 4 is aware of the issues at interchanges in this general area of Route 128, and there is a project in MassHighway's PROJIS system, (#87612) "Danvers and Peabody, Roadway Improvements on Route 128 from Route 62 South Danvers to Shopping Center Bridge Route 114", to address the problem interchanges.

D.2 *The subregion's commuter rail park-and-ride lots are full. Alternatives need to be explored. Ideas include satellite park-and-ride lots with shuttles to commuter rail stations, and improved bicycle accommodations at the MBTA stations, such as bike lockers.*

Response: These ideas will be included as potential solutions in corridor and subarea planning studies for the subregion as they are performed.

D.3 Written Comments from the City of Gloucester City Council
May 23, 2000

D.4 *The Gloucester City Council Planning and Development Committee would like to comment on mobility problems that are being experienced in Gloucester and that need further study. These include improvements to the train station located in West Gloucester and reconfiguration of the MBTA train bridges throughout the city. We also urge that work be expedited on the new train station being planned for downtown.*

Response: Your comments have been forwarded to the MBTA's Capital Planning Department.

E. North Suburban Planning Council (NSPC)

Comments from the Public Meeting for the NSPC Subregion
April 12, 2000

E.1 *The subregion is concerned about safety at the I-93/I-95 interchange, especially truck rollovers.*

Response: Following a previous request of NSPC, MassHighway District 4 erected "truck rollover" signs at the entrance of all the I-95/I-93 interchange ramps. Also, the ramps have recently been resurfaced, improving superelevation. Finally, it appears that this location may benefit from additional enforcement of the speed limit at the ramps.

E.2 *NSPC wishes to reevaluate bus service in the region. That is, does existing service meet the region's needs?*

Response: The MBTA's service planning department is continually evaluating and improving its bus service to better meet the public's changing needs. For example, within the past two years, changes have been made to five NSPC bus routes. The 134 and 137 have been changed to improve AM rush hour service from Wakefield to the Orange Line. The 351 has been rerouted to improve reverse commuting service for technical employees between Alewife and Burlington. The 354 now offers new midday express service between downtown Boston and Woburn. And the 132 from Stoneham to the Orange Line now starts earlier on Saturdays and holidays. Comments and opinions, on subjects ranging from scheduling and routing to maintenance and safety, can be submitted year-round to the MBTA's Service Planning Department.

E.3 *The subregion is interested in circumferential transit initiatives.*

Response: In general, ridership demand has been low for suburb-to-suburb circumferential transit service in the Boston region. According to a recent CTPS study, even cities and towns with a significant amount of available transit service have small transit mode shares: Quincy (7.4%), Newton (6.4%), Lynn (4.1%), Braintree (3.8%) and Waltham (2.1%).[1] Demand for circumferential transit service is likely to be even smaller. The study concluded that "an increase in public transportation service, absent major changes in land use and parking policy, would likely have little or no effect on suburban congestion, though it would be of benefit to people who are not able to drive."

Some communities have opted to fund suburban bus service themselves (e.g., the B Line in Burlington). For information on locally sponsored suburban transit service, it is best to contact your Transportation Management Area (TMA) coordinator.

E.4 *Connecting greenspace should be an important goal for the subregion. Showing dedicated greenspace on the GIS maps provided in the CMS report would help the subregion plan for greenspace acquisitions.*

Response: Connecting greenspace is not an immediate goal of the CMS, and therefore was not shown on any of the CMS maps.

E.5 *A subregional study was recommended for NSPC. The subregion requested copies of other subregional studies conducted in the Boston MPO region to use as examples.*

Response: Three copies of the Phase I report on the MetroWest Subregional Area Study and 10 copies of the scope of work for the MAGIC Subregional Area Study were sent to Joan Blaustein, NSPC subregional coordinator, on May 17, 2000.

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[1] CTPS for the Boston Metropolitan Planning Organization, "Suburban Public Transportation", August 1998.

Written Comments from the North Suburban Planning Council
May 23, 2000

The following concerns and questions pertain to the proposed multimodal subarea study for the subregion that was recommended in the draft 2000 CMS Report.

E.6 *Our major concern is that we question the usefulness of a broad-brush study that is an overview of the problems in the subregion. Based on our review of the MetroWest report and the MAGIC scope of work, we are concerned that the study would rework existing information based on 1990 census data and would result in fairly generic recommendations that would do little to move towards solutions . . .*

Response: Phase I of the subarea study provides a useful and comprehensive compilation of local travel trends and service conditions using the most recent data available. Also part of Phase I, are interviews with local town engineers and planners to solicit their opinions on problems and priorities. Other subregional committees have found this research to be a good starting point for targeting needs and defining transportation planning studies to be carried out in Phase II.

E.7 *NSPC would be interested in working with the CTPS staff to develop a scope of work that focuses on one or two problem areas where a more in-depth analysis could lead more directly to solutions . . .*

Response: CTPS staff can assist NSPC in developing a scope of work that addresses one or two problem areas.

E.8 *We would like to have an outline of what the likely timetable for this subarea study would be including when the scope of work would need to be developed, which UPWP the project would be in and the probable start and finish dates.*

Response: A variation of the subarea study, modified to address your specific needs, could be included in the FY 2001 draft Unified Planning Work Program (UPWP) for MPO approval in late September 2000. A new UPWP is approved every fall. The timetable for the study, including the probable start and finish dates, cannot be determined at this time. It depends on too many variables, including, but not limited to, the time it takes to develop a clear scope of work, the nature of the approved scope of work, and staff availability.

E.9 *We would like to know what the budget for this study would be so that we can understand the constraints and develop a reasonable scope of work.*

Response: A proposal for a $30,000 shuttle-bus service feasibility study is included in the recently approved FY 2001 UPWP. A detailed work scope will be developed shortly in cooperation with NSPC.

F. South Shore Coalition (SSC)

Comments from the Public Meeting for the SSC Subregion
April 27, 2000

F.1 *Pembroke is also a member of the Old Colony Planning Council (OCPC). The Route 14/Route 36 intersection in Pembroke, identified for further study in section IV.E of the report, is the subject of a recently advertised OCPC TIP project.*

Response: Both Stoughton and Pembroke are members of the OCPC, in addition to the TRIC and the SSC regions, respectively. Information regarding mobility problems, projects, and studies in these two towns was obtained from OCPC and has been incorporated into the 2000 CMS final report.

F.2 *The Route 53/Summer Street intersection (also known as Weymouth Landing), identified for further study in the report, would be redesigned should the MBTA's Greenbush Branch be implemented.*

Response: This intersection has been removed from the list of proposed studies.

F.3 *A master plan for the Route 53 corridor is needed and has been requested as part of the CMS process in the past. The corridor is currently being developed and upgraded piecemeal; it would be beneficial to have an overall plan to guide everyday land use-transportation decisions.*

Response: A proposal for this study has been included in the draft Unified Planning Work Program.

F.4 *In the subregional area study that you propose, we would like to explore ways of alleviating existing traffic congestion and managing future traffic growth that do not involve expanded roadway capacity. Better opportunities for traveling by bus, bicycle, and water are desired.*

Response: Alternatives to the single-occupancy vehicle could be considered in the proposed subregional area study. Furthermore, SSC committee members will have an opportunity to comment on the draft scope of work, once funding for the study has been approved by the Boston MPO.

Written Comments from the South Shore Coalition
May 30, 2000

F.5 *The South Shore Coalition is requesting a full corridor study of Route 53. We would like the study to include: alternative modes of transportation such as ferries and bicycles, and a current survey of journey-to-work info.*

Response: A proposal for a Route 53 Master Plan has been made that could assess build-out conditions for the corridor and determine traffic impacts and needed improvements. Such a plan would be useful to both state and local officials, boards, and committees when making land use and transportation decisions.

We believe that alternative modes of transportation, such as ferries and bicycles, are better subjects of a subarea study that looks at managing travel demand throughout the entire subregion. Some information regarding people's origins and destinations would be necessary to develop a plan.

G. Southwest Advisory Planning Committee (SWAP)

Comments from the Public Meeting for the SWAP Subregion
April 20, 2000

G.1 *Traffic volumes on Route 109 through Medway are increasing. Auto is the only [motorized] transport option. Public transportation should be provided along Route 109 so that people are not dependent on their autos.*

Response: Traffic concerns on Route 109 through Medway may be addressed through the Route 109 Corridor Planning Study. If approved by the MPO, this project would study the portion of the corridor that lies between I-95 and I-495.

G.2 *The draft CMS report does not adequately emphasize the need for park-and-ride lots that service carpool/vanpool/bus in the subregion. The State should be looking to further its partnership with private carriers to provide additional alternatives to traveling in and out of the subregion.*

Response: MassHighway is interested in siting new carpool/vanpool/bus park-and-ride lots, and is currently engaged in a series of studies to find locations where they are most likely to be used. Five potential sites have been identified along I-495. They are at Exits 19 (Route 109, Milford), 20 (Route 85, Hopkinton), 21 (West Main Street, Hopkinton), 22 (I-90, Hopkinton), and 27 (Route 117, Bolton). MassHighway is now evaluating these sites as well as testing scenarios for linked bus/park-and-ride lot systems.

G.3 *Freight rail lines through the subregion are being underutilized-you need to consider running passenger rail lines on them when not otherwise in use.*

Response: The Massachusetts Bay Transportation Authority (MBTA) is currently developing an updated *Program for Mass Transportation*. This document is the long-range mass transportation plan for the Boston metropolitan area. Your comments have been forwarded to the MBTA department responsible for developing this plan.

G.4 *The CTPS study already underway in the SWAP subregion is not comprehensive. The SWAP subregion should not be "bumped out" of the running for future CMS planning studies because of this current work.*

Response: There were two CTPS planning studies underway in the SWAP subregion at the time the draft CMS report was published. The Congested Signalized Intersections Study, recently completed, recommended improvements at four specific locations (intersections) in the subregion. The second study, recently begun, is more comprehensive. Phase I identifies high-priority problems and potential studies within the subregion, in cooperation with SWAP members, town planners, engineers, and others. Potential studies that are desirable to SWAP are to be carried out in Phase II.

G.5 *In view of the MBTA's current and proposed capital commitments, the possible commuter rail extension from Needham Junction to Millis should be classified as a low priority.*

Response: The CMS does not assign priorities to projects already under consideration by state agencies; however, it is acknowledged in the CMS report that the Millis extension, if reinstituted, would have limited benefits compared to the costs incurred.[2].

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[2] CTPS for the Massachusetts Bay Transportation Authority, *Millis Commuter Rail Extension Feasibility Study,* February 1998.

G.6 *The Needham Heights commuter rail station is underutilized because it is the last stop on the line and there are other stops nearby and closer to Boston. It is suggested that the Needham Heights commuter rail lot be added to the underutilized park-and-ride lots listed in the draft report. During weekdays, this lot is 40% to 50% empty.*

Response: A lot where 50% to 60% of the spaces are consistently full is categorized as "partially full" in the CMS. (Lots that are typically less than 50% full are "underutilized"). In keeping with these definitions, the Needham Heights lot will remain under the "partially full" category.

G.7 *The Route 109 Corridor Planning Study should extend from I-95 to I-495 so that a comprehensive picture of the corridor's problems and potential solutions can be examined. It should not extend from I-95 to only the Medfield/Millis town line (the TRIC/SWAP boundary), as recommended in chapter IV of the draft CMS report.*

Response: The proposed study's limits have been expanded to include Route 109 from I-95 to I-495.

Written Comments from SWAP
May 30, 2000

G.8 *There is a great amount of concern that due to the work of Seth Asante and his sub-area study, that the subregion is being "bumped out" of the Congestion Management process. There are a number of projects that have been studied and should be recommended for funding.*

Response: The two studies recently completed for SWAP by Seth Asante of CTPS were CMS planning studies. The one that Seth Asante is performing for SWAP now is also a CMS planning study. The SWAP subregion is not being bumped out of the CMS process.

Recommendations from recently completed CTPS planning studies have been given to MassHighway, the MBTA, and other applicable implementing agencies for their consideration.

G.9 *The region's Park-and-Ride lots are at capacity. A report studying the use of these lots was completed by CTPS last summer, and should be used to further evaluate the need to expand existing capacity at present locations and add additional locations along the I-495 corridor.*

Response: The 2000 CMS report states that the overwhelming majority of the region's commuter rail park-and-ride lots are full on a daily basis. The study completed by CTPS last summer (and handed out in draft form at the April 20 SWAP meeting) investigated the factors that make MassHighway carpool/vanpool/bus lots (also known as park-and-*drive* lots) successful. That study recommended that several sites along the I-495 corridor be investigated. The results of this investigation should be available soon.

G.10 *The current commuter rail service is consistently over-crowded at peak times, as such there is a need for the Millis commuter rail line to be re-instated to reduce congestion.*

Response: A feasibility study of the proposed Millis line, completed by CTPS in 1998, concluded that the extension would be feasible but would produce few benefits for the costs incurred.

G.11 *As the region's roadways see increased congestion there is a growing need for a Logan Express shuttle and/or expansion of the Bonanza bus line service to Logan.*

Response: Based on a recent survey of Logan Airport users, a Logan Express shuttle is not planned for the SWAP subregion. However, Massport is considering a bus connection between South Station and Logan Airport (possibly running at 15-minute intervals), which could serve commuter rail riders from the south and west.

G.12 *There is a need for infrastructure improvements to facilitate "reverse commuting" such that the schedules are convenient for suburban workers and employees.*

Response: Expanding transit service for reverse commuting would not be cost-effective in today's travel market due to low ridership demand.

G.13 *In general, there is a need for a shift in emphasis from increasing road capacity to land use and mass transit solutions to discourage auto use. The emphasis for future roadwork should be to address deterioration and to add traffic calming measures and pedestrian amenities to better serve existing and future abutting land uses. Road design standards need to be updated to facilitate this shift.*

Response: The purpose for much of the roadwork that occurs in the Boston MPO region today is to alleviate existing traffic congestion. Prevention of future traffic congestion is best achieved by long-range planning. Local and regional comprehensive plans, updated periodically and adhered to, can help guide everyday decision-making towards the ultimate goals described in the comment.

There are many communities in the Boston MPO region (e.g., Cambridge and Newton) that are implementing traffic calming measures and improving travel conditions for pedestrians and bicyclists. In these cases, it is the communities themselves that have shaped the plans and nudged them through the planning process.

H. Three Rivers Interlocal Council (TRIC)

Comments from the Public Meeting for the TRIC Subregion
April 19, 2000

H.1 *Eventually, will we all get a version of the report that covers all eight subregions of the Boston MPO?*

Response: The 2000 CMS Report is being published in eight volumes, one for each of the eight subregions of the Boston MPO. There is no plan at this time to publish all eight volumes under one cover. However, copies of all eight volumes can be requested; see page ii for numbers and addresses, including the address of the MPO Web site, which includes a copy of the CMS report in its entirety.

H.2 *The name of the planning study, from which a given roadway mobility problem is identified, should be documented so as to know the source of the finding.*

Response: This information will be incorporated into the next CMS report.

H.3 *In the draft CMS report, it states, "Islington [park-and-ride lot] is a small lot that is hard to get to and has a parking fee. It's close to a much larger, free lot that has easier access." What free lot are you referring to?*

Response: The lot referred to is Dedham Corporate Center, which is no longer free. The mistake has been corrected.

H.4 *The new parking structure at the University Avenue Amtrak/commuter rail station is four stories, not three stories as mentioned in the draft report.*

Response: The correction has been made.

H.5 *The index to the map on Roadway Mobility Concerns describes location #22 as Route 27 (in Walpole) from West Street to Route 1A. West Street does not intersect Route 27; this segment description must be incorrect.*

Response: This segment should have read Route 27 (in Walpole) from Common Street to Route 1A. The correction has been made.

H.6 *In view of the MBTA's current and proposed capital commitments, the possible commuter rail extension from Needham Junction to Millis should be classified as a low priority.*

Response: The CMS does not assign priorities to projects already under consideration by state agencies; however, it is acknowledged that the Millis extension, if re-instituted, would have a higher capital cost per new commuter rail rider than the average cost per rider on the present MBTA commuter rail system.[3]

H.7 *The Needham Heights commuter rail station is underutilized because it is the last stop on the line and there are other stops nearby and closer to Boston. It is suggested that the Needham Heights commuter rail lot be added to the underutilized park-and-ride lots listed in the draft report. During weekdays, this lot is 40% to 50% empty.*

Response: A lot where 50% to 60% of the spaces are consistently full is categorized as "partially full" in the CMS. (Lots that are typically less than 50% full are "underutilized"). In keeping with these definitions, the Needham Heights lot will remain under the "partially full" category.

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[3] CTPS for the Massachusetts Bay Transportation Authority, *Millis Commuter Rail Extension Feasibility Study*, February 1998.

H.8 *The limits for the proposed Route 109 Corridor Planning Study should extend from I-95 to I-495 so that a comprehensive picture of the corridor's problems and potential solutions can be examined. It should not extend from I-95 to only the Medfield/Millis town line (the TRIC/SWAP boundary), as recommended in section IV.E of the draft CMS report.*

Response: The proposed study's limits have been expanded to include Route 109 from I-95 to I-495.

Written Comments from the Town of Sharon
April 19, 2000

H.9 *With respect to the Index of Park & Ride lots:*

- A. *Show the capacity of each lot*
- B. *Attempt to incorporate private and public lots being used for RR parking*
- C. *Show the daily or monthly fee in place, if any, at each lot.*

(Note: the data on the University Ave/Rte 128 station in Westwood is decidedly out-of-date since a parking garage has been in operation since November. It is operated at an estimated 33% of capacity)

Response: The three categories of park-and-ride lot data listed above were collected in 2000 and will be presented in the next CMS report.

H.10 *Differentiate by commuter line the data on overcapacity and late arrival data rather than combine Franklin, Attleboro, and Stoughton data.*

Response: Commuter rail performance data will be presented by individual line rather than lumped together as North Station trains and South Station trains in the next CMS report.

H.11 *Roadway mobility data would be far more useful if ADT or peak travel data was given for the segments referenced.*

Response: It would be a costly undertaking to collect ADT (average daily traffic) or peak travel data for each of the segments identified as congested in the Boston MPO region. However, a monitoring system based on functional class is being considered for the next CMS report. A correlation between functional class and traffic volume ranges can often be made during peak travel times in heavily congested areas.

Written comments from the Town of Canton
March 15, 2000

H.12 *The regional solution [to the ongoing problems of traffic congestion and lack of public transportation] should include the construction of a modern public transportation system and the mandatory use of that new and modern public transportation system for commuter trips to Downtown Boston . . .This new subway system could be modeled after the Washington D.C. system . . .After the construction of a World Class Transit System, (say year 2025) no private automobiles would be allowed to enter downtown Boston during the morning rush hours. (6 AM through 9 PM).*

Response: Your comments have been forwarded to the MBTA's Capital Planning Department, which is currently engaged in updating the region's long-range transit planning document, the Program for Mass Transportation.

I. Joint Regional Transportation Committee (JRTC)

Comments from the JRTC Meeting
May 10, 2000

I.1 *I am concerned with pollution and how it affects the health of the residents in Roxbury, Dorchester, and Mattapan.*

Response: There are two planning studies recommended in the CMS report that may possibly minimize pollution in these communities. One of the studies may consider replacing the current Fairmount commuter rail service with a new light rail service that has more frequent stops. The other study looks at replacing bus route 28 with light rail service.

I.2 *Another problem is that the tracks were removed from Washington Street and there was supposed to be replacement service there, and nothing has happened.*

Response: The Orange Line tracks were removed from Washington Street and will be replaced by the Silver Line, a clean fuel burning articulated bus that operates in a semi-dedicated right-of-way. The Silver Line is currently under construction; the estimated completion year is 2002.

I.3 *It seems to me that you are making traffic congestion more predictable than it really is, especially in the rush hour. All it takes is one accident, usually caused by excessive speed, to cause tie-ups that usually last for well over an hour. You would think that stiff fines would deter everybody. But the only deterrent is when you see a police car. It seems to me that we should use electronics to capture more of these aggressive offenders. The only mistake that these people will admit to is getting caught. Another thing that has caught my attention was in the center of Canton the other day. I saw this machine that told me how fast I was going. We should have an electronic means of notifying people that they were observed doing 80 mph in a 65-mph zone, the fine for which is $500. Whether this is legal or could be made legal, this certainly is something that is crying out for attention. If 500 people were caught during an experiment and paid an average of $500, this would be widely reported and in relatively short time would bring about the slowdown that we so desperately need.*

Response: Actually, accidents are most often caused by speed differentials, and can include both fast- and slow- moving vehicles. Nevertheless, we do agree that more law enforcement would be beneficial. The electronic surveillance you mention is an ITS application, but it is presently illegal in this state.

I.4 *The parking lot data misses some important information. Someone the other day told me that the parking lot she uses was full at 6:30 in the morning. This means that hundreds of people were unable to park there. They see the lot is full, and they keep driving. These are potential transit users. Just saying it is full is not enough; there needs to be information on when it is full.*

Response: We are considering collecting and including this information in the next CMS report.

I.5 *I think you have a tremendous amount of good information here to help us prioritize TIP projects. We need to know not only which lots are filling up but also when they are filling up. We need to begin to prioritize projects based on the efficiency of that expenditure of public resources in improving the system. The other thing that I hope you are looking at is that when you try to solve a problem, that the solution does not shift the problem elsewhere.*

Response: Traffic diversions are actually examined when we execute CMS planning studies. That is when we look at impacts in detail.

I.6 *Your priority list is very long and I think we need to find out where the biggest problems are so that we can prioritize those.*

Response: As a member of JRTC, you will have a chance to exercise some control over those projects through the UPWP and the TIP.

I.7 *Traffic signals are not long enough for people with disabilities or on wheelchairs to get across. I like what Cambridge has done with the signals that tell you how much time you have to get across. I think that is wonderful.*

Response: We agree that pedestrian signal phases need to be long enough for the elderly and handicap to cross the road.

I.8 *One of the things I think you should look at is what was done in Westchester County, N.Y. Instead of expanding commuter rail parking, they have developed a bus-to-rail system where buses feed into the trains. That is much more effective than trying to expand lots where property doesn't exist.*

Response: The idea of establishing feeder shuttle bus service to commuter rail park-and-ride lots has been mentioned by other citizens and planners in the Boston MPO region and its feasibility probably merits further investigation.

I.9 *There are specialized bus services to the government center and the insurance center, Park Square/Back Bay. You have to start thinking about how you are going to terminate these services from parking lots for employees. That is a serious problem private carriers are facing right now, and I don't see it in here.*

Response: Thus far, private carrier service performance is not monitored in the CMS.

I.10 *I noticed you mentioned the Dorchester Branch. I want to notify you that during World War II, the Office of Defense Transportation authorized the discontinuance of all train service there because it was not contributing to the war effort because it was poorly located. It may still be needed for freight.*

Response: Passenger service was reinstituted on the Dorchester (Fairmount) Branch in 1979 when the Southwest Corridor Project was underway and was kept in operation at the public's request. The Fairmount Commuter Rail Feasibility Study will examine higher frequency service with closer stop spacing using present day demographic information. Ridership estimates will be prepared before any service expansions are undertaken.

I.11 *At Haymarket, there is a serious problem as to where you are going to load the passengers. The city of Boston wants to build parking lots and hotels, and this is keeping hundreds of employees off the buses.*

Response: The MBTA is aware of the on-going effects the Central Artery/Tunnel (CA/T) construction has had on bus service to Haymarket. In fact, over the past several years, the MBTA has responded to construction impacts by changing bus stop locations, adjusting bus schedules, and making other improvements necessary to maintain efficient service. This attention will continue through CA/T construction.

I.12 *I think what you are doing is fabulous. If you look at statistics you are looking at and look at alternative modes such as bus feeders instead of parking lots the whole business that the intelligent transportation systems idea is producing of systems that deliver people to stations as opposed to adding parking lots to it. I think you can begin to start generating a significant amount of suggestion about how we can make major reductions in congestion, road rage, etc. I would encourage you to go* *to MASCO and other people who are running private systems and get those included, because they are clogging up the roads just as much as the cars are.*

Response: More and more attention is being given to integrated transportation systems to efficiently move people and increase mobility. The CMS is making strides towards integration by examining roadway, transit, and park-and-ride performance in one document and by proposing CMS planning studies that look at multiple modes at a regional level of analysis. Providing seamless connections will continue to be a goal of the CMS.

I.13 *MASCO is carrying people from various employment places like the government and the insurance people on systems that are in effect duplicating what the MBTA is doing. If they are not coordinated, they are not benefiting anybody. They shouldn't be there if they can't be coordinated in a larger sense. I sat outside MIT in the pouring rain watching a MASCO bus go by with two people on it, and there were 30 people at the bus stop. There is no excuse for that.*

Response: We agree that more coordination between these systems would be desirable.

I.14 *I would like to give the lie to the idea that there are no suburban densities that can support public transportation. Suburban densities in retail and service employment can certainly support public transportation because these are areas of employment that draw their labor locally. They are not drawing labor from all points of the compass. I can cite you examples of the shopping trip along Route 9 that is served by a system that is not the MBTA. A similar concentration out in Marlborough along Route 20 of hospitality centers, the Solomon Pond Mall, and a couple of schools whose employees need ways to get to work in Southborough. These are areas that can support public transportation services. Let's not go galumphing off into the wilderness with the idea that suburbs cannot support public transit.*

Response: Thank you for your comment.

I.15 *There is also a problem with the MBTA, the city of Boston, and the Highway Department. There doesn't seem to be any effort to resolve disputes around certain key stations under the ADA. Like Haymarket—we still have to cross three miles to get to buses. In Kenmore, they are still fighting over where the buses are going to be. Therefore, they are still trying to figure out where they are going to put the elevators. Therefore, congestion over there is going to go on forever. When one entity is through, the other entity has to start. FTA has given the MBTA drop-dead dates on those extensions.*

I.16 *In your discussion of the transit side, I heard mention of buses and commuter rail but not rapid transit. Was rapid transit not included?*

Response: Rapid transit is included.